

A Legend in Her Own Time

If you've seen one president's secretary, you've seen 'em all. Not possible? At Sandia, it is. Rosalie Crawford (1) was secretary to the Labs' first president, George Landry, during his tenure from 1949-1952. And she's been secretary to every president since — all eight of them.

LAB NEWS learned recently that Rosalie plans to retire June 30. You don't let legends slip out the door unnoticed, right? She agreed to an interview, though in her usual modest way, said, "People may not be very interested. You know, I'm not in the *Guinness Book of World Records*, or anything.

"I may, though, have set a Sandia record that will be around for a while."

And what a record it is. But let's start at the beginning. Rosalie, a native New Mexican, was born and raised in Deming. She received a BA in economics from Dominican College in San Rafael, Calif., and worked for a Vallejo, Calif., law firm for 2-1/2 years before returning to New Mexico and Albuquerque during the summer of 1948.

She applied for work at Sandia and was immediately accepted. "No testing, no anything," she says. "My clearance came through in about three months, and I signed in on Nov. 3, 1948. My first assignment was secretary to the electrical staff of the engineering department. My immediate supervisor was J. C. Starks, assistant manager of SLE [Sandia Laboratory Engineering]."

Sandia was a relatively small place back then — some 800-900 employees, Rosalie recalls. "It was almost a feeling of family," she says. "You knew everybody, and everybody knew you."

Most new-to-Sandia employees feel slightly bewildered; it's rather like moving to a new city, with a new set of rules, new words to learn, etc. Though it's difficult to imagine, did Rosalie feel like a greenhorn when she signed on? "Did I ever!" she laughs. "I'd take page after page of dictation. Some of the words I'd never heard in my life, but I'd transcribe what I *thought* I heard. Bill Boyes, who is now retired, saved my life many, many times. He would read over my transcriptions, and change what needed to be changed. I remember one instance in particular; I'd transcribed 'baro switches' as 'barrel switches' — maybe 25 times in one report! Anyway, Bill became my 'official translator'; he gave me a good image, if you know what I mean. I'm eternally grateful."

How was Rosalie chosen as secretary to George Landry, Sandia's first president? "There wasn't any job bidding," she recalls. "And back in those days,

(Continued on Page Six)



ROSALIE CRAWFORD (1), secretary to all nine Sandia presidents, retires at the end of June. "I couldn't have asked for a better group of men to work for," she says.



ROSALIE CRAWFORD, surrounded by the Sandia presidents she's served (clockwise, from upper left): George Landry, Donald Quarles, James McRae, Julius Molnar, Sigmund "Monk" Schwartz, John Hornbeck, Morgan Sparks, George Dacey, and Irwin Welber.

LAB NEWS

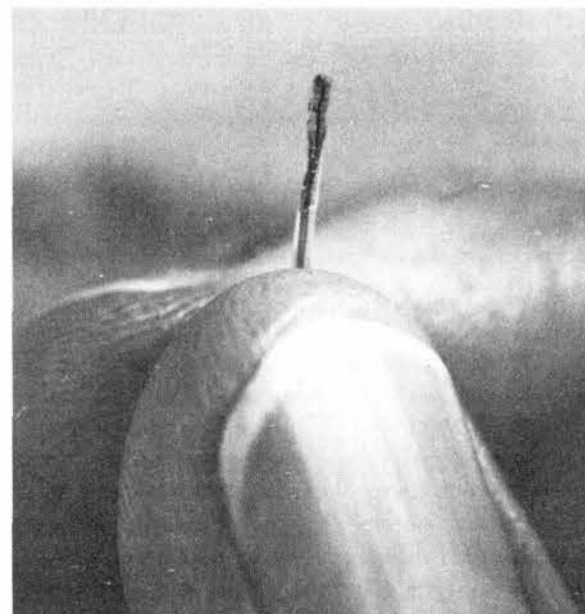
VOL. 38, NO. 12
SANDIA NATIONAL LABORATORIES
JUNE 20, 1986

Radiation Microsensor Developed for Cancer Patients

One offshoot of the BIOLOGUE forums (an ongoing interchange among Sandians and UNM faculty and students) is the adaptation of a radiation sensor for measuring — inside the body — the precise amount and rate of radiation received by cancer patients during localized therapy.

When Bob Hughes, supervisor of Sandia's Microsensor Division (1142), learned from Chuck Kelsey, the chief of Biomedical Physics at the UNM Cancer Center, that such a sensor was needed, he was able to visualize a miniature device that could — directly and continuously — measure the radiation reaching specific organs. Smaller than the head of a pin, it would be mounted on the tip of one of the dozen catheters — thin plastic tubes — that are routinely inserted into the brain, breast, cervix, or prostate to

(Continued on Page Five)



SMALL FRY: The tiny radiation sensor is part of a rugged monitor that may not be just a medical device, but a whole family of devices. Military applications often require mounting the RADFET on a header, or a solid metal part, instead of the catheter pictured here. In the future, the RADFET may also be embedded in a digital watch to serve as a personal dosimeter.

Antojitos

Addresses Again It's been more than a year since we surveyed the current crop of "mail to Sandians it's a miracle they received." Time to review. One package, from Canada, was addressed to 1515 Evbank Street SE, Albuquerque, New Mexico. A letter from India came to Albuquerque, New Mexico, New York.

It's true that, in spite of the best efforts of Div. 3161, "Sandia" is not a household word. This past year we've gotten mail addressed to "Sabdia Labs" (perhaps the writer had a headcold), "Sadie Labs," "Sandra National Labs" (homey touches both), "Indian National Labs" (well, we do have an effective Affirmative Action program, but . . .) and "Sandinista National Labs"! (The latter probably wanted to buy a couple of B83s.)

Getting the "Sandia" part right doesn't ensure accuracy either. One letter was addressed to Ms. Sandia Laboutouis. Another came to Sandia National Cabs (well, we do work with delivery systems), still another to Sandia National Park (come view the scenic wonders).

Then there are the properly addressed ones — for example, the one to the SNLL Library that contained a catalog of books on marijuana. It was not, we hasten to add, solicited — or used to augment our book collection; we're not doing chemical warfare R&D.

Or the one from Ohio that came via the U.S. Customs.

Finally, there's the letter that Ken Wischmann (DMTS, 7472) received a month ago. Complete with 5-cent stamp, it was postmarked April 21, 1967.

* * *

Goodbye, Rosalie!

* * *

Solecisms We've Committed Lately LAB NEWS has been chastised (and properly so — we criticize everyone else) for a couple of linguistic miscues in the last issue. One is our mention of the "La Fonda Hotel." Given that La Fonda means The Hotel, we allowed a gaffe of the same proportion as "Rio Grande River."

And in describing the disarming of Diablo, we suggested that the device might have detonated "if probed and palpitated." We should have said "palpated," a literate research scientist reminds us. He's (dammit) right. Mea culpa! ●BH

* * *

Vitiis nemo sine nascitur. (Latin: Nobody is born without faults.)

Fun & Games

Bowling — SANDOE Bowling Association Bowler of the Month results: men's scratch, Fred Gunckel (2545), 669; women's scratch, Mary Berniklau, 581; men's handicap, Ray Letourneau (ret.), 670; women's handicap, Thelma Harrell (310), 632.
* * *

Golf — The short course group in SWGA played its first major at Ladera executive on May 31. Results were: A Flight: Minnie Shurick, low net; Diana Wilhelm, low putts. Flight B: Bernie Doyle, low net; Nina Coe (7533), low putts.

On June 7, SWGA attacked University South for the second major. Winners were: Flight A: Ree Gerchow (122), low net; Rosalie Crawford (1), second low net; Debbie Tricoglou (7485), low putts. Flight B: Mary Scott (3463), low net; Dolores Chavez (1000), second low net; Teresa Mills (3724), low putts.
* * *

Tennis — The Sandia Tennis Association will host a tennis tournament at the Coronado Club tennis courts on June 28 and 29. Events will include men's and women's A and B singles and men's and women's doubles. Entry fees are \$3/person per event for STA members and \$6 for guests. Prizes will be awarded for first and second place finishers. Contact Al Ortega (6242) at 4-3952 or Terry Martinez (1260) at 6-7806 for entry forms. Deadline for entering is 4 p.m., June 25.
* * *

Running — The Second Annual Dinosaur Run to benefit the New Mexico Museum of Natural History Foundation is set for July 19. This event is the Official State of New Mexico Association of the Athletics Congress Eight-Kilometer (4.9 miles) Road Race Championship and One Mile Fitness Fun Run. The race starts (7:30 a.m.) and finishes at the N.M. Museum of Natural History. T-shirt, food, drink, and post-race drawings are included in the entry fee: \$8/general public; \$6/grade and middle school students. Entry forms are available at the LAB NEWS office, Bldg. 814, Rm. 1.

Sympathy

To Joy Tomek (154) on the death of her two grandmothers in Nebraska, May 20 and May 28.

To Dolores Chavez (7818) on the death of her mother in Albuquerque, June 5.



SANDIA'S BOARD OF DIRECTORS met earlier this month at the Labs for a series of briefings on Sandia activities. Shown here during a break between sessions are (l to r), Tom Cook (20); Larry Lemasters, Executive Vice President, AT&T Bell Labs; Thomas Thomsen, President, Technology Systems Group, AT&T Technologies, Inc.; Irwin Welber (1); Lee Bray (30); and Ian Ross, President, AT&T Bell Labs. The board received update briefings on weapons and energy programs, pulsed power, SDI, reimbursables, and arms control issues. Unable to attend the meeting was Board member John Zeglis, Executive Vice President & General Counsel, AT&T Technologies, Inc.



LAB NEWS

Published Fortnightly on Fridays

SANDIA NATIONAL LABORATORIES

An Equal Opportunity Employer

ALBUQUERQUE, NEW MEXICO
LIVERMORE, CALIFORNIA
TONOPAH, NEVADA
AMARILLO, TEXAS

Sandia National Laboratories is operated by Sandia Corporation, a subsidiary of AT&T Technologies, Inc., and a prime contractor to the U. S. Department of Energy.

BRUCE HAWKINSON, Editor
PHYLLIS WILSON, Writer
IRENE DUBICKA, Writer
RANDY MONTOYA, Photographer
GERSE MARTINEZ, Asst. Photographer
JANET WALEROW, Editorial Assistant
BARRY SCHRADER, Livermore Reporter

Member, International
Association of Business Communicators

ABCs of Family Day



ing in this direction. All show-and-tell sessions

Family Day at SNLA is set for Saturday, Oct. 18, from 9 a.m. to 4 p.m. The program centers on the theme of ". . . exceptional service in the national interest," and everyone involved in preparing exhibits is encouraged to get some creative juices flow-

in individual labs should be linked in one form or another to this overall theme, a quote about Sandia taken from President Truman's 1949 letter to AT&T.

The event is open to Sandians, DOE/AL employees, "Q"-cleared Sandia contractors and consultants, and Sandia retirees. Guests for Family Day, in keeping with its name, will be limited to relatives. The family-only policy and other security matters will be spelled out in future LAB NEWS articles.

Building with Computers

For many years, engineering drawings were the only means of getting something built, be it a bolt or an airplane.

Developed over the centuries, the engineering drawing system has been an integral part of the world's industrial development. But the system often meant hours of painstaking work as a drafter set down on paper the concepts of an engineer.

But now Computer-Aided Design (CAD) and Computer-Aided Manufacture (CAM) are revolutionizing the way in which an idea becomes a finished product. Sandia is a key player within DOE's Nuclear Weapons Complex in this design-to-product innovation.

The goal is nothing less than electronically integrating the design-to-production sharing of the product definition database to eliminate ambiguity in drawing interpretation by engineering, analytical, planning, or fabrication people.

During any of the development stages, the database is available to those in the Lab who need to review or analyze the design and provide new information to the design engineer. Problem areas and potential changes can be noted in a copy of the CAD file. The CAD drafter retains control over the master file and incorporates those changes approved by the design engineer. The finished CAD file can then be electronically transmitted to the appropriate production agency.

"Sandia Livermore is an ideal place to implement CAD/CAM," says Ed English, supervisor of Computer-Aided Engineering Division 8274. "Our operations are compact enough to make the support of everyone involved with one system both feasible and manageable."

"Computer-aided design works on the same principle as word processing," he says. "You can copy a file, make changes, keep the original, and save the new file under a new name. The old system of making drawings is, to continue the word-processing analogy, like using a typewriter."

The drawing classically done on a drafting board is the perception of the drafter, explains Ed. Just as the painting is a picture of what is going on inside the artist's head, the computer monitor display and the plotted output picture is a view of what is occurring inside the computer. While a drafter can draw a line and make it represent any measurement, the dimensions in a computer database are integral to the design — with much more accuracy than the picture indicates. Consequently, the picture and actual dimensions are consistent.

Time for Design Process Reduced

"In a similar fashion, a machined surface produced on a computerized machine tool is to one made by a machinist like a lithographic reproduction of a painting is to a copy made by an artist," says Ed. "The first is an accurate reproduction of the original; the second can never exactly duplicate the original."

"With the CAD system, we can construct a wireframe picture on a screen, put a surface on it, and shade it," he continues. "We can see what a new component will look like before a prototype is fabricated. This is better than an artist's rendition because it's derived from the actual design. The technical artist may use artistic license to create the picture, but with mechanical definition we are sure to get an accurate rendering. In this way, the design process can be reduced from months to days, even hours."

"CAD helps engineers and drafters make designs understandable to people who are removed from the design phase, such as machinists, non-technical staff, and management. One example of this is quoted by Bendix Kansas City. BKC noted a cost reduction of approximately 25 percent on bids to fabricate hardware in outside shops when CAD-generated views were added to the classical engineering drawings."

Ed emphasizes that CAD will not replace artists: "We will be able to use them just for what they



TAKING PART in a CAD operating system training course are (from left, standing) trainer Helen Foster of Computervision, Dick Isler, Bob Aiken, Vern Byfield, and Bruce Koopman (all 8274); (from left, seated) Spike Leonard (8235), Paula Neighbors (8274), Don Hall (8272), and Sherry Bowen (8274).



SANDIA LIVERMORE NEWS

VOL. 38, NO. 12

SANDIA NATIONAL LABORATORIES

JUNE 20, 1986

do best. As the technical art group is getting smaller, we have to find new ways of obtaining support. For presentations to higher management, such as the Joint Chiefs of Staff, we'll still depend on the artist."

As most Sandians are aware, the Labs uses a variety of computers. The resulting communications problem is multiplied when all the design labs and production plants are included. Bob Dougherty, manager of Engineering Support Department 8270, points to the importance of the SNLA assignment as the lead laboratory for CIM (Computer-Integrated Manufacturing): "We make this variety of hardware compatible by making it possible for all the different computers to talk to each other. This is done by converting everything to a common language, DOE-DEF [Design Exchange Format]. It's a necessary part of doing business. The goal is to be able to put the electronic definition generated in the design agency equipment directly into the CAM machine that makes the product in the production plant."

Whole Programs Now on CAD

SNLL has been purchasing CAD hardware for the last nine years, but CAD is only now maturing into a complete system with sufficient capacity for a whole program. Ed points out that "One year ago, 15 percent of our designers had CAD equipment available to them. By the end of this year, half our design stations will be equipped with CAD terminals. A significant amount of hardware is being installed so that our next major program can be fully developed on the CAD system."

"We are working on the new electronics component assembly entirely on CAD now," he continues. "This includes the circuit boards and the surrounding mechanical structure. We'll put the whole design into the electronic media and transmit it to the production agency in that form. And the Trident II program under development in Albuquerque is being done entirely on CAD. It is the first complete program the DOE committed to this technology."

"In our new electronic component, the main design job is electrical. We are using a new rigid-flex design for the circuit boards. One of the layers is a flexible material that can be bent. The usual

stacked-layer configuration is easier to design but more difficult to fabricate because of the connectors and interconnection wires. The rigid-flex is more space-efficient, is easier to wire, and is more complex to design. CAD provides a means to keep track of the greater complexity."

Both Ed and Bob are excited about this quantum advance in engineering design. "It's a major step forward," says Ed. "It's the key to accomplishing our design and engineering function most effectively."

Sympathy

To Clarence Rogers (8257) on the death of his brother in Livermore, May 12.

To Paul Nielan (8241) on the death of his grandfather in Buffalo, N. Y., May 17.

To Don Stoner (8173) on the death of his father in Livermore, June 4.

To Ken Fung (8132) on the death of his father in Oakland, May 31.

Take Note

To catch a thief! Barry Formisano (8445) looked out his apartment window on a Saturday morning in early June and spotted what looked like two men attempting to steal a motorcycle in the parking lot below. Grabbing his videotape camera with zoom lens, he recorded the action while a friend phoned the Livermore police. When the police arrived and caught the suspects, Barry turned over the tape as evidence.

For his quick thinking and helpfulness, he received a letter of commendation from Police Chief Mel Nelson. It read, in part: "Thank you for the commendable act you did in taping an entire episode of an attempt to commit burglary. I appreciate your keen observance, follow-through in taping the incident, awareness as a citizen, and caring enough to do something about it. I wish there were more citizens like yourself helping to fight crime." Nelson enclosed a videotape to replace the one that recorded the crime in progress.

How to Avoid 'The Revenge of the Gas Pumps'



TRAFFIC TIE-UP tantrums can be terminated if you take the time to travel to the Transportation Fair at the 861 Cafeteria.



SUN-TRAN'S Sandia express buses have a few empty seats. Find out how to fill one at the Transportation Fair on June 25.



If you're tired of being all tied up in traffic, you can explore some alternative ways to get to and from work at the upcoming Transportation Fair.

Sponsored by Benefits' Commuter Assistance Program (which is honchoed by June Aydelotte, the 4-RIDE connection), UNM's Ride-

pool, and Sun-Tran, the Fair will provide information on biking, walking, skateboarding, vanpooling, carpooling, and busing (with emphasis on the latter two).

Prizes too — gift certificates for Rain Tunnel car washes, for gasoline, for \$19 bus passes, and for other goodies — more than \$100 worth.

You become eligible for the prize drawing by registering (or re-registering) with Ridepool's carpool matching service or by signing up for Sun-Tran's "Trip Planner" service, which gives you a map of how to get from your home to Sandia by bus, no matter where in Albuquerque you live.

Even if you're not quite ready to abandon your auto immediately, stop by, view the displays, sign up for a service (you don't have to commit yourself to be on a bus come Thursday), and enjoy the Fair. It runs from 11:30 to 1 on Wednesday, June 25, outside the Bldg. 861 Cafeteria.

Welcome

Albuquerque

Larry Johnson (3312)

Magdalene Gee (133)

Illinois

James Redel (5146)

Kansas

Douglas Bickel (2633)

Jeffrey Bradley (5238)

Missouri

Deborah Jensen (2313)

Texas

David Grice (2362)

Take Note

"Statements in Wood," "Entropy Pieces, e.g., Decline and Fall of Front Porch," and "Mummy Dearest" are some pieces of Lee Garner's (3151) wood art on exhibition in a vacant storefront window at 117 Amherst SE (just west of Nob Hill Business Center) through the month of June. Lee is one of 87 artists participating in Art Windows on Route 66, part of the June Celebration of the Arts.

Faith Perry (3523) has been selected by juried competition to exhibit her paintings in the Fine Arts division at the New Mexico Arts and Crafts Fair to be held at the New Mexico State Fairgrounds June 27-29. Out of 800 applicants, 27 percent were chosen to exhibit. Faith's category was watercolor, one of the stiffest in the competition.

The NM Arts and Crafts Fair is the culmination of the June Celebration of the Arts. This is the 25th anniversary of the event. Fair hours are 10 a.m.-10 p.m. Fri.-Sat. and 10 a.m.-6 p.m. Sun. Admission is \$2, children under 12 admitted free.

Faith will show her work and talk about the Fair on Julia Gabaldon's (3523) TV program, "Somos Bilingues," on June 22 at 8:30 a.m.

A two day workshop, "Basic Project Management," sponsored by the Rio Grande Chapter of the Project Management Institute, will be held July 28-29 at the Albuquerque Federal Statesman's Club (5th Floor, City Centre, 6400 Uptown Blvd. NE). The workshop will be presented by Erika Jones, president of Erika Jones and Associates, Inc. The hands-on workshop, limited to 20 participants, will cover basic methods for managing any project. Registration is at 8 a.m., and the program is from 8:30 a.m.-5 p.m. The fee for Rio Grande Chapter members is \$120 before June 30 and \$140 after (non-members \$150 and \$175). For more information, call Erika Jones at 884-8850.

LaForet Family Camp isn't just for children. It's for the entire family as well as other adults with or without children. Campers (children and adults)



AQUILA TECHNOLOGIES GROUP, INC., Sandia's nominee for the Small Business Administration Contractor of the Year Award, received top honors for SBA Region Six at an award ceremony last month at the Coronado Club. On hand for the award presentation were (l to r): Ralph Huybrechts, Aquila controller; Jerry Beckes, Aquila president; Bob Quigley, asst. regional manager (Region Six) for SBA; and Art Davie (3000). Aquila was chosen from among 27 competing firms in Region Six, which includes New Mexico, Texas, Oklahoma, Arkansas, and Louisiana. The company sells and services a wide variety of computer-related products; during the last year, it completed 233 contracts with Sandia for a total of \$1.13 million. In the last 11 years, Sandia has had eight of its nominees win the regional Contractor of the Year award, one the national.

spend a portion of their time each day in a group of their choosing. Groups offered include journal writing, theater, psychic channeling, spirituality, Aikido, outdoor experience, and personal growth and relationships. Activities outside the planned group schedule include evening campfires, volleyball, hiking, folk dancing, talent night, and a Friday night "Crystal River Cotillion." Organized by Unitarian Universalists but open to all, the camp is scheduled for July 27 to August 2 on the campus of Colorado Rocky Mountain School at Carbondale, Colo. For more information, contact Jonathan Weiss (7116) at 821-8256.

Imagine sailing in a lovely yacht, anchoring in a secluded cove, and swimming in crystal-clear, warm

Caribbean waters. If this is your idea of fun, Bill Horton, retired Sandian, has a trip for you. He's organizing non-profit sailing cruises of 7 days each during October, November, and December for small groups of 5-8 persons interested in sailing the Caribbean in a 50-ft. yacht. No sailing skills are required. Manning the yacht will be an experienced and knowledgeable sailing master. There are private staterooms and showers, and most meals will be served aboard. Snorkeling gear is provided, and scuba expeditions are available. The approximate cost for the use of the yacht with captain, food, and taxes for 7 days and nights is \$525/person. Sailing areas are the U.S. and British Virgin Islands and the Grenadines (St. Lucia, St. Vincent, Grenada area). For details, call Bill at 883-7504.

Microsensor

allow X-rays from radioactive pellets to reach the organ.

The radiation dosimeter-in-a-catheter, or RADFET, as Bob calls it, now has reached the prototype stage. Jay Snelling and Tom Zipperian (both 1141) embedded the square-faced RADFET (0.6 mm in length and width, and almost as thin as a human hair — 200 microns) edgewise in a cylinder of epoxy in the middle of the 0.8-mm-wide catheter.

Tony Ricco (1142) already has designed an electronic circuit for the readout — the leads coming out of the free end of the catheter can be hooked up to a personal computer in a hospital. (In its simplest form, the device can also be read out using a battery, resistor, and an inexpensive voltmeter.)

It has been not yet been tested on people or animals. "Sandia doesn't have the charter or the funding



RADFET CO-DEVELOPER Bob Hughes (1142) had the radiation dosimeter mounted on the tip of a 0.8-mm catheter for use in cancer patients, who get an average dose of 2000 rads per organ. (For comparison, the total body count for an average Albuquerquean is 75 thousandths of a rad annually from cosmic rays and other sources.) Bob says that there's "a fair level of enthusiasm about the RADFET, particularly in some European countries, where some sort of radiation measurement on all cancer patients is required by law."

About one of every four persons in the U.S. suffers some type of cancer during a lifetime, and about half of all cancer patients receive radiation treatments.

— Chuck Kelsey (UNM)

to further develop it as a mass-produced biomedical probe," says Bob.

There are many prospective users. According to Chuck, about one of every four persons in the U.S. suffers some type of cancer during a lifetime. Half of all cancer patients receive some form of radiation treatment, with some 50% of those getting localized radiation therapy, either to specific organs or as boosters to partial-body treatment.

Direct Real-Time Measurement

The sensor — a MOSFET, or metal-oxide semiconductor field-effect transistor — is simple, common, and cheap to mass-produce. But no one had ever used it before in a medical catheter to measure irradiation of internal organs. "Until we devel-

oped the dosimeter, computer modeling was the standard way of measuring how much radiation was being applied," says Bob. "Even today, no one makes routine, direct, real-time measurements of the target site."

Although MOSFETs are the building blocks of electronics, are commonly available at parts stores, and cost only about \$10 a dozen, "their radiation response is not well-known," says Bob. Although they are not manufactured as radiation detectors, all MOSFETs are sensitive to radiation to some degree. Fortunately, Bob knows the theory and physics of how a MOSFET works, and understands what happens when radiation hits it (see "How the RADFET Works").

"We've piggybacked on what's already been done in weapons development," says Bob. "And development of the RADFET is continuing at Sandia with the ion-implantation method," developed by Bill Dawes (2120) and Jim Schwank (2124) in the late '70s. Further development is being carried out by Gordon Munck (2151). For weapons use, radiation detectors are mounted in conventional headers, or solid metal casings, and are used to read much higher dose levels (hundreds of thousands of rads).

Dennis Huffman's (2157) work on weapons added important information that made the medical spinoff possible: He found a MOSFET, commercially produced by Intersil, that was adequate in the intermediate-dose range required for the medical application. (The average local dose to the cancer a patient receives from pellet implantation is 2000 rads. The RADFET dosimeter can easily read down to 10 rads a day.)

Whole Family of Devices?

The conceptual leap made by Hughes and Kelsey — plus the packaging accomplished at Sandia — has made possible a whole family of health applications, including exposure monitoring for civil defense and for use by those involved in nuclear reactor maintenance or waste management.

"Tony's circuit should work fine for medical dosimetry in a hospital, but a more sensitive RADFET would be needed for personnel dosimetry," says

Bob. "All that would have to be developed is the kind of microelectronic readout found in a \$4 digital watch."

A radiation sensor, after all, does not have to be implanted in the body. It could just be another

Think of the information value to the people living near the Chernobyl accident site if they would've had an on-the-spot wrist readout of [individual] exposure . . ."

— Bob Hughes (1142)

function — like a chronometer — on the watch itself. "Think of the information value to the people living near the Chernobyl accident site if they would've had an on-the-spot wrist readout of [individual] exposure," muses Bob. "Many would've had a chance to leave before a significant dose was received." (Sandia's Health Physics Division 3312 considers five rads a year a significant dose.)

The current technology — including the little white badges at Sandia — used for monitoring personnel exposure is a thermoluminescent device (TLD). "The TLD badge has to be mailed in and put in an oven," says Bob. "That heats the crystal and the light coming out is counted. It's sensitive, but it's only for one-time use: You have to erase it to read it. And there is no permanent record."

In contrast, the RADFET can be used and read out continuously for years. Or, it can be used for periodic checks on cumulative dosage. It's rugged: Bob has been carrying around one of his RADFETs in his briefcase for months and it still works. "And I don't know of any dosimeter that's as small as the RADFET, or runs on so little power," adds Bob.

The radiation microsensor can even stand alone, in a remote location, with the readout being relayed by radio telemetry. This is where the RADFET may have parallel applications for military use — as a test instrument embedded in radiation-bombarded components in space or underground, according to Bob. He says that although "Sandia's big task is hardening of microelectronics against high doses of radiation, a lot has been learned recently about how to exploit soft electronics."

CHANGE IN THRESHOLD VOLTAGE of a RADFET is a function of the dose in rads, as diagrammed on the board by Dennis Huffman (2157). The prototype can easily read 10 rads per day and a cumulative dose of 50,000 rads. With minor processing changes, RADFETs can be made with varying ranges of sensitivity: intermediate for the medical application and high for a personnel dosimeter, a possible future application.

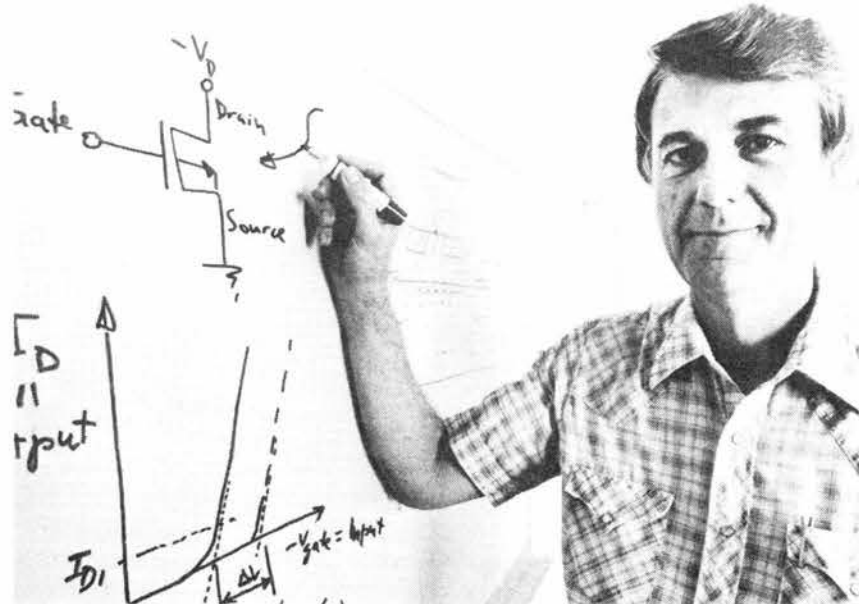
How the RADFET Works

The RADFET — or radiation-sensing field-effect transistor — is a type of MOSFET (metal-oxide semiconductor field-effect transistor). The fact that radiation has relatively strong, measurable effects on certain silicon-based MOSFETs led to their use as sensors in miniature dosimeters.

A MOSFET is basically a voltage-controlled resistor consisting of four main parts: (1) a source of electrical charge carriers, (2) a channel that carries these charges, (3) a gate, for controlling electrical current passing through the channel, and (4) a drain, for final output from the device. Applying a voltage to the gate allows electric current to flow from the source to the drain.

In the RADFET, radiation changes one of the electronic characteristics (the potential) of the silicon dioxide between the gate and the silicon channel. As a result, there is also a change in the voltage that must be applied to the gate in order to permit a given current to pass from the source to the drain. The amount of this change is proportional to the amount of radiation to which the device has been exposed. The change in gate voltage thus can be measured with an off-the-shelf meter in order to determine the rate and total amount of radiation exposure.

The approximate relationship between the change in gate voltage and the radiation dose is an increase of 0.15 thousandths of a volt per rad. Given the particular RADFET in the dosimeter developed by Sandians and the UNM Cancer Center, a 2000-rad dose shifts the required voltage input by about a third of a volt (2000 rads is a typical dose for localized irradiation of cancerous tissue):



Hagengruber to Speak at Trinity Conference

Roger Hagengruber, director of Systems Studies 300, will be a featured speaker at a public forum on security issues, the Trinity Conference, in Los Alamos on Thursday, June 26, at 7:30 p.m.

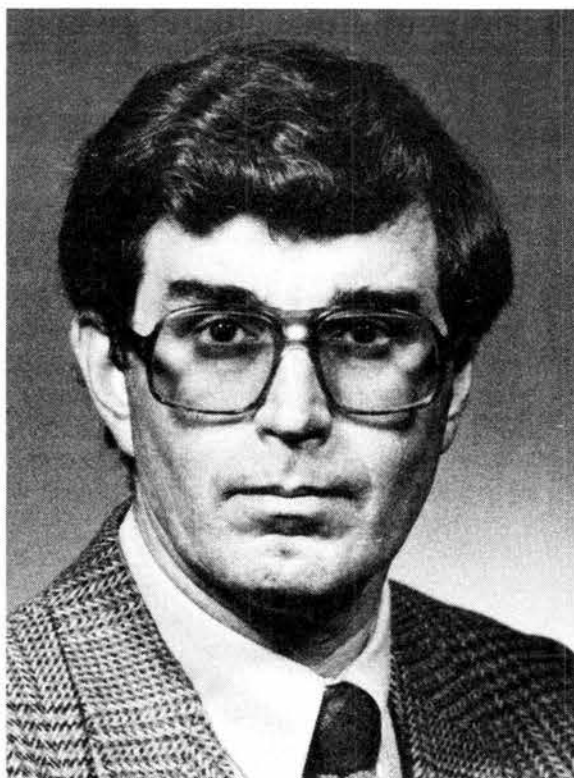
He will be on a panel discussing the role of the scientific community in national security. Other panelists include Richard Garwin, IBM defense analyst; Stephen Rockwood, associate director for Defense Research and Analysis at LANL; Louis Rosen, LANL senior fellow; and Lloyd Dumas, political economist at the University of Texas.

The conference, according to its NM-based organizers, is an effort to develop "a fresh approach to building security in the Nuclear Age" by bringing together concerned citizens and experts with diverse perspectives. Mediators and a conflict resolution consultant will be on hand to help participants build a consensus by exploring common ground and focusing on potential methods of dealing with national security needs and problems in the context of international harmony.

The Trinity Conference is the first program of an ongoing, nationwide Trinity Forum — with both named after the Trinity Test, the world's first detonation of an atomic bomb near Alamogordo in 1945.

The conference continues for two more days at Santa Fe's Sweeney Convention Center (210 W. Marcy St.). Other topics for discussion include "The Effect of Defense Spending on the Economy" — Friday at 9 a.m.; "What Is Our Best Defense?" — Friday at 7:30 p.m.; and "US-Soviet Relations: Are There Grounds for Reconciliation?" — Saturday at 9 a.m.

Some of the dozen or so panelists who will address these issues are Richard Pipes, professor of Russian history at Harvard and former National Security Council member; Robert White, president of the International Center for Development Policy and for-



ROGER HAGENGRUBER (300)

mer U.S. Ambassador to El Salvador; Charles Wolf Jr., director of International Economic Policy Research at the Rand Corporation; and Thomas Graham, general counsel for the U.S. Arms Control and Disarmament Agency.

U.S. Senators Jeff Bingaman and Pete Domenici and NM Governor Toney Anaya also are planning to participate.

Two workshops will be offered to the public to allow discussions in small groups with the panelists. These sessions (1:30 p.m. on Friday and Saturday) will focus on defining "Future Approaches to National Security" and "Global Politics."

The conference is sponsored by UNM, the NM League of Women Voters, the NM Community Foundation, the NM Conference of Churches, the NM Peace Education Fund, and Project Victory.

The Thursday evening program at the Los Alamos Civic Auditorium (1400 Diamond Dr.) is free to the public. The registration fee for the remainder of the conference is \$35. For additional information, call 1-473-4298.



MICHAEL PACHECO (7813; second from left), general carpentry instructor for apprentices, is proud — with good reason — of what three first-period (beginning) carpentry apprentices built since they joined Sandia in February. Flanking Mike (from left) are Orlando Griego (7813), Robert Urias, and George Gabaldon (both 7818). Behind them are cabinets the three built: (l to r) Orlando's birch cabinet, Robert's oak cabinet, and George's walnut cabinet. "The cabinet project is a good one because it requires the apprentices to use much of the large power equipment in the shop — the table saw and radial arm saw, for example," says Michael. "I'm especially pleased with the good work turned out by these three, because none of them had much background in carpentry before they came to the Labs." Somewhere out there, three lucky Sandia secretaries are now proud possessors of three spanking new cabinets!

Rosalie

seniority didn't have much to do with it — everybody was relatively new. I was just told by Mr. Larsen [Paul Larsen, director of the Sandia Branch, Los Alamos Laboratory, in 1948-49 when Sandia was still operated by the University of California] that I would be working for Mr. Landry. I don't really know why I was selected; maybe it was because I was one of the few on-roll secretaries with a college degree.

"Anyway, Mr. Landry came to Sandia from Western Electric [when the Bell System took over Labs operations for the government] on Oct. 6, 1949, and I started working for him about three weeks later — scared to death, I might add!"

Since Rosalie's worked for all nine Sandia presidents, we asked her for an in-a-nutshell description of each. What traits come readily to mind? "That's really pinning me down. I feel extremely fortunate, in that this was a fantastic group of men — all beautiful people in one way or another." Individually, Rosalie had this to say:

George Landry — "Hard to get to know, but terrific once you knew him. Gruff, but a good organizer, which is just what we needed back in the early days."

Donald Quarles — "Sharp — a brilliant mind. Dictated 4-5 hours a day. At the end of, say, 25 pages of dictation, he'd say, 'On about page 5, let's change



THE FAMOUS "ROSALIE SMILE" has greeted visitors to the president's office since 1949. Here, she's shown at her desk in the early 1950s.

... It was phenomenal! Very polite, and very grateful for whatever you did for him."

James McRae — "Friendly, easy to get to know. A super guy — everybody liked him. Fair, very sharp. First man in the job with a PhD."

Julius Molnar — "Another brilliant person. Kind of on the shy side, so people didn't really get to know him. Marvelous sense of humor — very human. Kind and compassionate. Asked me to go with him and be his secretary at Bell Labs when he returned there — but I just didn't want to leave New Mexico!"

Siegmund "Monk" Schwartz — "A real peach! I still talk to him frequently, and consider him a close friend. Gruff in a way. Had a real temper, but would get over things immediately, and never held a grudge. Circulated around Sandia more than any of his predecessors, so employees knew him quite well."

John Hornbeck — "I liked him. Wanted things done as quickly as possible; that's served me very, very well ever since! Had a rather aloof manner; did not get to know people well, and they didn't get to know him. I think that's a shame; I enjoyed working for him. Still hear from him from time to time."

Morgan Sparks — "Oh . . . anyone who knows him will tell you the same thing! Delightful, extremely sharp, very conscious of being part of the community. Soft-spoken, very thoughtful, very kind, good sense of humor."

George Dacey — "Very outgoing, comes on strong, wonderful sense of humor, always willing to do whatever people asked — within reason! You may recall he sang a few numbers at the ECP kickoff a

Retires a Remarkable Record

couple of years ago. Extremely cooperative, active in the community. Loves being busy; thrived on travel and involvement with Sandia business activity. Enjoyed the 'busy-ness' of the job as much as anything."

Irwin Welber — "A wonderful, dry sense of humor; it sometimes hits you when you least expect it. Quick mind, fast on his feet, a real delight. He's been around since last October, and I've enjoyed every minute."

Rosalie continues, "I couldn't have asked for a better group of men to work for. In my book, they're top-notch. Sandia has grown under each one of them. Not one of them simply 'maintained' the place during his stay here. And I always felt as if they were not just my employers; they were my friends."

How do you break in presidents at a place like Sandia? Actually, reports Rosalie, a person's predecessor in the job does more to "bring him up to speed" than anyone else. "For me," she says, "it was like starting a brand new job each time. Each man wanted things done just a little differently, so it was kind of a new beginning each time around. Things were never dull!"

While sitting in the nerve center of Sandia for more than 37 years, Rosalie has had some memorable moments, and she shared a few with us. She recalls the winter day when the weather was "terrible" — blizzard conditions. "Monk" Schwartz made the decision to send everyone home. "Five minutes after everyone was gone, the sun came out, and all the snow melted. We kidded him for a long time afterwards about 'inclement weather,' and he took the ribbing in a very good-natured sort of way."

Then there was the time that Dixie Lee Ray, then-chairman of the AEC, arrived for a visit with John Hornbeck. Ray's entourage included her two dogs — a Scottish deer hound and a poodle. Much to the surprise — and consternation — of all concerned, the dogs accompanied her to an early morning briefing in Hornbeck's office. "They were introduced to me — rather like people — in the outer office," recalls Rosalie, "and then they proceeded to share a chair at the conference table in Mr. Hornbeck's office while the briefing was presented. Seems to me that somebody knew in advance that the dogs would be coming along, so they even had special badges to wear inside the tech area."

As a secretary to presidents, what does Rosalie see as her most important responsibility? "I've always felt that visitors — outsiders, if you will — see me

as a representative of my boss. It's as much a P.R. job as anything else. My manner, my actions, reflect on the man I work for, and on Sandia itself. I've worked to make that reflection a favorable one." Does she see herself as a protector of sorts? Probably, though Rosalie points out that Bell Labs people (several have been Sandia presidents — see sidebar) answer their own phones, so "I can't always be an effective screen."

It's not only outsiders who get a glimpse of the Rosalie reflection. She's unfailingly courteous and cooperative with the Sandians, high ranking or low, who phone or visit her.

Why is it that we never see Rosalie moving through the halls at a pace close to normal walking speed? It's always a brisk walk, or a cross between a walk and a trot. "That's a habit left over from the early days," she chuckles. "Back then, I was in an office by myself. When I left, I would have to ask someone to stand in the hall to watch the office. Rather than keep people standing in the hall, I would rush — and I've been rushing ever since. Even when I broke my ankle, I managed to get around at a pretty good clip!"

Switching to another subject, Rosalie says, "The fun part of the job has been the people. That's what I'll miss the most — the people. I'll miss the work too, but it's the *people* that make the job. I can come in here feeling just rotten, and somebody will ask me how I am. I'll say 'fine,' and before I know it, I *am* fine!"

Probably the word used by people most often to describe Rosalie is "upbeat." How does she maintain what appears to be a constantly positive attitude? "I guess it's because I've always loved my job," she says. "I wouldn't have traded it for anything, and feel very fortunate to have ended up in the job I did."

In answer to another question, she says, "If I could go back and do it all over again, I don't think I'd change very much of anything along the way. I've given it my best shot all the way through. I've never forgotten some advice I received from my Dad a long time ago. He used to tell us kids, 'When you're working for someone else, give them their money's worth.' So I've always tried to come to work early, stay as late as I needed to, do whatever the job required. That's sort of the philosophy I've lived by — because he [her father] said that, and he believed it so wholeheartedly himself."



BACK IN 1972, Rosalie recalls, AEC Chairman Dixie Lee Ray, along with her dogs, visited President John Hornbeck. Shown in a Bill Laskar photo is the chairman, flanked by H. C. Donnelly, AEC/ALO manager (left), and President Hornbeck. In front, the canine contingent — a French poodle and a Scottish deer hound — relaxes before the briefing begins.

Any words of advice for her successor, whoever that person might be? "No," says Rosalie. "Because that person will probably see the job differently than I do. My way would probably not be my successor's way; the person should follow her — or his — own thoughts and ideas. I just hope whoever it is enjoys the job as much as I do."

Back to that matter of records: "I think I've set a record that nobody's ever going to match," says Rosalie with a twinkle in her eye. "Thirty-seven years without a promotion!"

Rosalie's retirement plans include sharpening her golf game. "In fact, somebody called me the other day and invited me to join the men's golf group," she says. "I just might do it." (Rosalie has been a long-time member of the Sandia Women's Golf Association, and intends to continue with the group.) She plans to stay in Albuquerque, and hopes to get her yard "in better shape, but I don't intend to spend all my time there. I have relatives here, and some still in Deming, as well as Gallup, so I hope to have a chance to spend more time with my family."

Wrapping it all up, Rosalie says, "I've really enjoyed working at Sandia all these years, and having the opportunity to meet all those terrific people along the way. I'm not going to have a chance to get out and say goodbye to everybody, and to thank them for all their support through the years. Maybe through this LAB NEWS article, though, they will know I'm thinking about them."

A legend? You bet. Mahogany Row just won't be quite the same after June 30.

Sandia Leaders — A Brief Look

Before October 1949, when the Bell System (now AT&T) took over management of Sandia for the federal government, Sandia was a small branch of Los Alamos Laboratory located in Albuquerque. The directors of "Z" Division, as it was known, were: Jerrold Zacharias (1945), Roger Warner (1946), Robert Henderson (acting, 1947), and Paul Larsen (1948-Oct. 1949).

Rosalie Crawford (1) has been secretary to every Sandia president since October 1949. Here's a list of those men, including the dates they filled the top slot at Sandia, where they came from, and where they went immediately afterward.

George Landry (Oct. 1949-Feb. 1952) — Previous job: Operating Manager, Installation, Western Electric. Left SNL to become Vice President, WE.*

Donald Quarles (March 1952-Aug. 1953) — Previous job: Vice President, Bell Labs. Left SNL to become Assistant Secretary of Defense, Washington, DC.*

James McRae (Sept. 1953-Sept. 1958) — Previous job: Vice President, Systems Development, Bell Labs. Left SNL to become Vice President, AT&T.*

Julius Molnar (Oct. 1958-Aug. 1960) — Previous job: Vice President, Military Programs Research, Bell Labs. Left SNL to become Exec-

utive Vice President, Bell Labs.*

Siegmund "Monk" Schwartz (Sept. 1960-Oct. 1966) — Previous job: Asst. Project Manager, Operations and Programming, Western Electric Defense Projects Division. Retired when he left SNL, and lives in Albuquerque.

John Hornbeck (Nov. 1966-Sept. 1972) — Previous job: President, Bellcomm, Inc. Left SNL to become Vice President, Electron Technology, Bell Labs, and is now retired and living at St. Simon Island, Georgia.

Morgan Sparks (Oct. 1972-July 1981) — Previous job: Vice President, Electronic Technology, Bell Labs. Became Dean of the Robert O. Anderson Schools of Management, UNM, after he left Sandia. He's now retired and lives in Albuquerque.

George Dacey — (Aug. 1981-Jan. 1986) — Previous job: Vice President, Operations Systems and Network Planning, Bell Labs. Retired when he left SNL and lives in Albuquerque.

Irwin Welber — (Feb. 1986-present) — Previous job: Vice President, Transmission Systems, Bell Labs.

*Deceased



Events Calendar

- June 20 — Summerfest, Friday Evening Gala: "AMIGAS y su Grupo Ritmo" (Tex-Mex, rock, variety); 5:30-9 p.m., Civic Plaza.
- June 20 — "Classical Music of India," 8 p.m., KiMo, 848-1374.
- June 20-29 — "School for Scandal," lampoon of manners, mores, and the mannered; 8 p.m. Fri.-Sat., 6 p.m. Sun.; Vortex Theatre (Buena Vista & Central), 247-8600.
- June 20-29 — "Crime on Goat Island" by Ugo Betti, 8:30 p.m., Corrales Adobe Theatre, 898-3323.
- June 20-22, 27-28 — "Damn Yankees"; 8:15 p.m., 2:15 p.m. Sun.; Albuquerque Civic Light Opera, Popejoy Hall, 345-6577.
- June 20-Sept 30 — Exhibit, Ye'ii, Ye'ii Bichai and Navajo dry painting ceremonial tapestries; 9 a.m.-4 p.m. Mon.-Fri., 10 a.m.-4 p.m. Sat.; Maxwell Museum of Anthropology, 277-4404.
- June 21 — Summerfest, Juneteenth Freedom Celebration, 4-10 p.m., Civic Plaza.
- June 21 — Silver Hill Walking Tour, a tour of houses in historic district; meet at 9:30 a.m. at E. J.'s Coffee House (Silver & Yale); 842-5368 or 242-8586.
- June 21 — 10th Anniversary Celebration, Rio Grande Writers' Association; 10:30 a.m., Special Collections Library (Edith & Central), 344-1475.
- June 21 — Chorale Concert I, Santa Fe Desert Chorale; 8 p.m., Keller Hall, 277-4402.
- June 21 — Watermelon Evening, Watermelon Mountain Jug Band; barbecue, silent auction, dance; free admission; 5-10 p.m., First Unitarian Church (3701 Carlisle), 884-2999.
- June 21 — Duke City Comedy Club with special guest Emo Phillips, 8:30 p.m., KiMo, 255-7831.
- June 22 — Arts in the Parks: Outdoor Concert, Albuquerque Philharmonic Orchestra and the Giovanni String Quartet; 4-7 p.m., Inez Park (Virginia & Cutler); 764-1525.
- June 23-26 — Arts and Crafts for Children, 2-3:30 p.m., free, South Broadway Cultural Center, 848-1320.
- June 23 — Rio Grande Writers' Association, Albuquerque Branch; three woman poets read from their book, *A Conspiracy of Familiar Objects*; 7:30 p.m., KiMo Gallery, 344-1475.
- June 23-28 — "Footloose," movie shown every day at 3:30 p.m. (6:30 p.m. June 25), South Broadway Cultural Center, 848-1320.
- June 24 — San Juan Pueblo Feast Day, 852-4400.
- June 24 — New Mexico Museum of History Lecture: "Tortugas: Isle of the Falcon," Tom Smylie, U.S. Fish and Wildlife Service; 7 p.m., KiMo, 841-8837 or 841-8872.
- June 25 — "Chrysalis," local filmmaker's premiere, reception following; 8 p.m., KiMo, 243-5473 or 265-2047.
- June 27-29 — New Mexico Arts and Crafts Fair, featuring work of 225 New Mexico artists; regional food, live entertainment; 10 a.m.-10 p.m. Fri.-Sat., 10 a.m.-6 p.m. Sun.; New Mexico State Fairgrounds, 884-9043.
- June 27 — Summerfest, Friday Evening Gala: Bill Preveti and the sounds of Glenn Miller, more Big Band sounds; 5:30-9 p.m., Civic Plaza.
- June 27-28 — "Spirit Dreams," autobiographical play written and performed by Deborah Blanche, 8 p.m., KiMo, 243-1673.
- June 27-August 17 — "Tierra Sagrada," a bilingual, romantic musical about life and love along the Rio Grande; 8 p.m. Fri.-Sat., 3 p.m. Sun.; La Compania de Teatro de Albuquerque, El Nuestro Teatro; 256-7164.
- June 28 — Daylily Show, Albuquerque Garden Center (10120 Lomas NE), free admission.
- June 29 — New Mexico Jazz Workshop, Sunday Jazz at Madrid; 3-7 p.m., Oscar Huber Memorial Ballpark (Madrid), 842-6659.
- June 29 — Poetry reading and performance, Women's Resource Center, 7-9 p.m., South Broadway Cultural Center, 848-1320.
- June 29 — Movietime at the KiMo, Boy Meets Girl Series: "Frantic" (French, 1958), Louis Malle film, English subtitles; 7 p.m., KiMo, 848-1374.



STATE AWARD for Distinguished Public Service was presented to George Dacey (right) by Gov. Toney Anaya last month at the Marriott Hotel. The recently retired Sandia president was honored for his contributions in the business and civic category. Dacey served as chairman of the Governor's Commission on Technical Excellence, member of the board of directors of NM Technet and Rio Tech, and member of the Economic Forum and the advisory council of UNM's School of Engineering. On the civic side, he was recognized for his support of the United Way, Albuquerque Civic Light Opera, NM Symphony Orchestra, and the Santa Fe Opera Foundation. Eight awards were given this year during the 17th annual event. The last Sandian to receive an NMDPS award in past years was Morgan Sparks, back in 1981.

feed back

Q. The traffic light near the Visitor Center has been in various states of malfunction for more than a year, flashing during peak traffic periods, stuck at other times.

I've discussed the problem with the KAFB traffic repairman while he was "adjusting the time cycle." He claimed this particular light was the responsibility of Sandia. Regardless of who "owns" this light system, it would seem that Sandia could muster adequate clout to remedy this situation.

A. That traffic signal and all other existing traffic signals at KAFB are between 15 and 20 years old. Several traffic signals around Sandia Labs were purchased by Sandia; however, the signals became the property of the Air Force to maintain. The traffic signals are Springer models, and that company went out of business a few years ago; no parts exist to replace broken or worn components. The signal technician at the Air Force has a difficult time trying to adjust the old signal controllers without the needed parts.

Currently, the Air Force has contracted an engineering firm to design the replacement of 13 existing traffic signals under Stage I and to replace or add an additional 9 traffic signals under Stage II. The design of both stages will be completed this year. The new signal system will consist of the latest technology in traffic signals. Features such as computerized controllers, traffic sensors to count traffic demand, and 8 phases per signal are all specified in the design.

The traffic signal you reference is listed under Stage II design. Until the new traffic signal system is installed, the only recourse Sandia has to mitigate the traffic signal problems encountered by the motorists is to notify the signal technician at the Air Force, which has been done.

R. W. Hunnicutt - 7800

Q. I note that Org. 2300 has only two Distinguished Members of Technical Staff and that, in general, the percentage of DMTSs is lower among groups associated with weapon development than those primarily concerned with R&D. Is it that scheduled development has less glamor than R&D, where results tend to be exciting? Or is there a bias toward

Congratulations

To Patricia Barton (3423-1) and Richard Lujan (1822), a son, Joshua Corry, March 17.

To Debbie and Alex (6323) Gonzales, a daughter, Sylvia Marian, May 15.

To Elaine and Charles (2858) Lloyd, a son, Charles H. Lloyd III, May 23.

To Stephanie and Ron (7171) Taylor, a son, Ryan Michael, May 26.

To Karen and Douglas (6224) Ruby, a daughter, Christine Joan, June 4.

To Vinda and Steve (1233) Crawford, a son, Philip, June 6.

selecting people with jobs that sound glamorous, or do the best people gravitate to these jobs? I hope that it's not the latter, because that would imply that our nuclear arsenal was designed and produced by Sandia's "second team."

A. As you may be aware, Small Staff initiated the DMTS Program to honor members of the Technical Staff who have a record of sustained above-average performance or who have made unique contributions to the technical missions of Sandia.

Eligibility for DMTS is determined by an algorithm that is used for determining which MTSs are eligible by vice presidency. Each vice president is then allocated a number of nominees that is directly proportional to the number of MTSs who are eligible. The VP chooses nominees from the eligible group. Thus each VP does not necessarily have the same number of DMTSs; in fact, the eligibility algorithm favors those organizations containing employees with longer experience, many of whom are vital to our main line weapon development job.

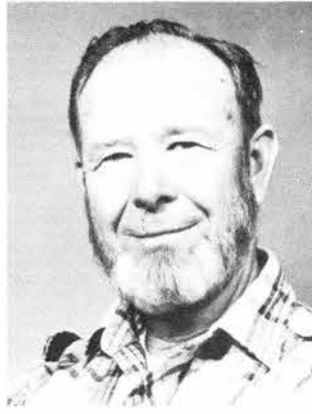
Small Staff is extremely sensitive about ensuring that those selected for DMTS recognition are people who have made long-term and steady contributions to the broad spectrum of Sandia's endeavors. Under no circumstances would we tolerate even an unintentional slight of the many excellent staff members who contribute to our first and primary mission — weapon development. Of course, there are not many DMTSs in any particular directorate since there are only about 5 percent of our MTSs who have attained the DMTS distinction.

T. B. Cook - 20

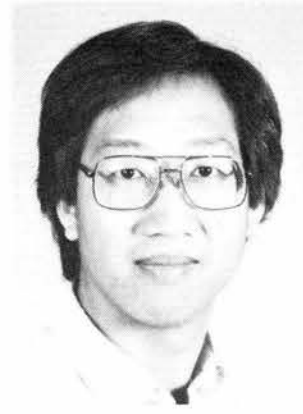
MILEPOSTS

LAB NEWS

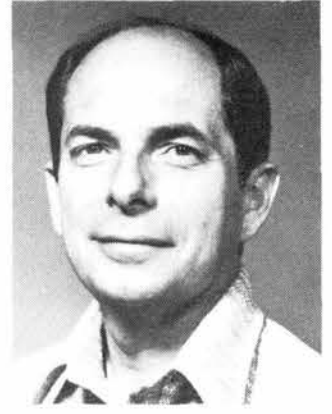
JUNE 1986



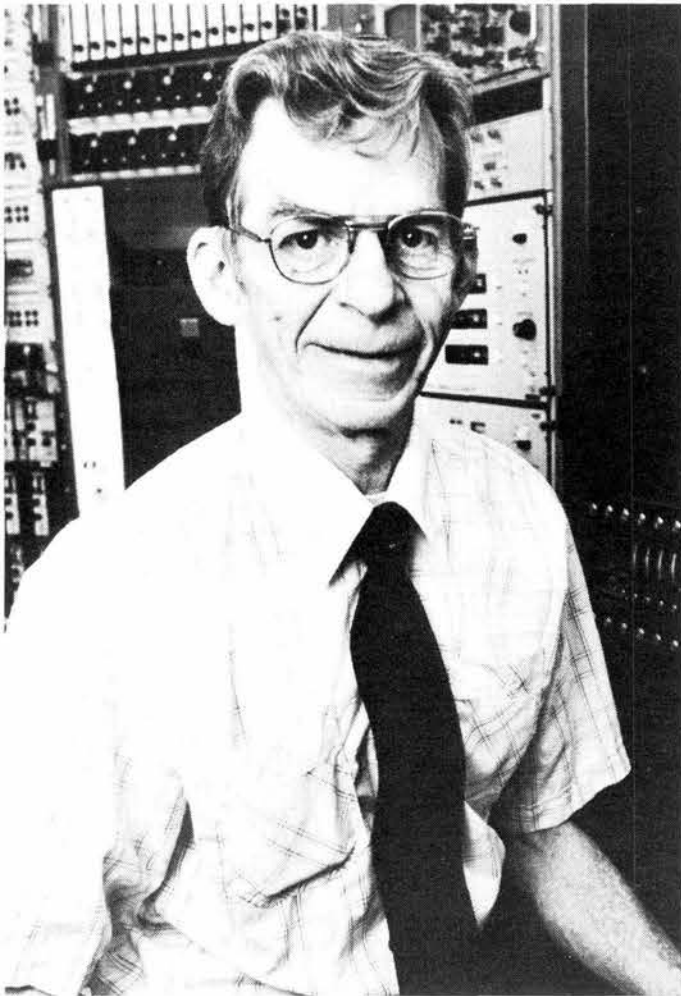
Chuck Peeples (1834) 20



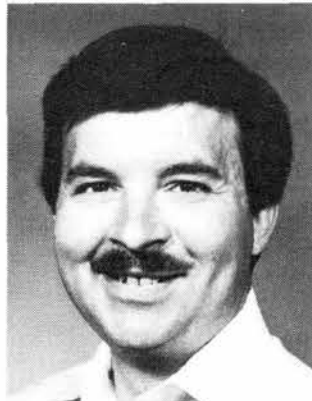
Dan Yee (8171) 10



Bob Wemple (6242) 25



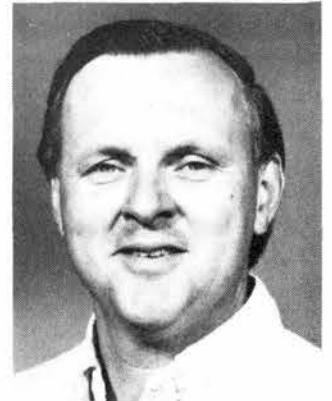
Bill Burns (5145) 30



Don Daigle (5155) 10



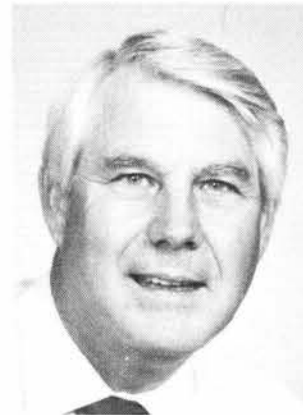
Craig Jones (2610) 25



Chuck Borgman (2336) 20



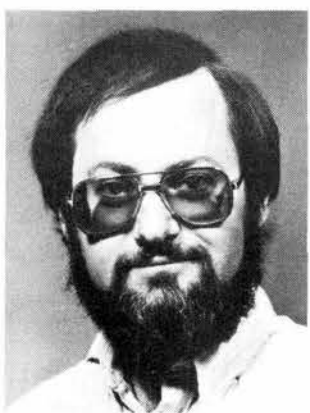
Phyllis Padilla (3521) 10



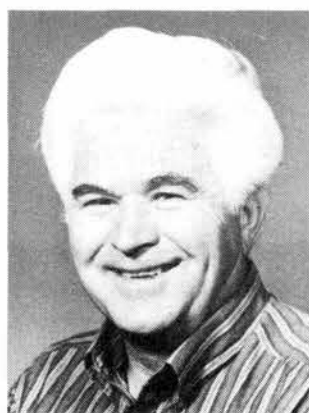
Jim Ackerman (8161) 20



Pat DeTevis (2833) 10



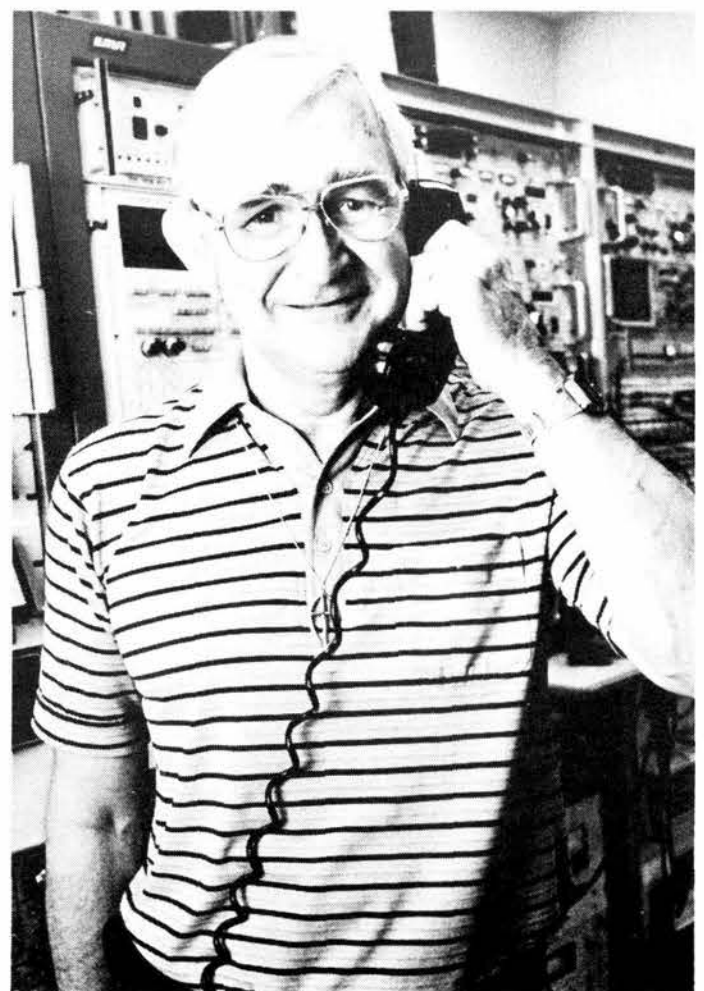
Martin Molecke (6332) 10



Bob Wood (5122) 30



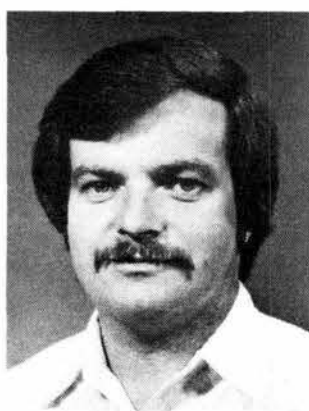
Ed McKelvey (8153) 25



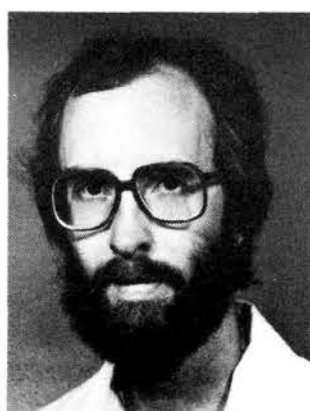
Bruce Ercole (5142) 30



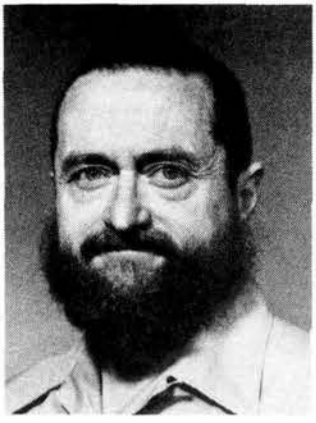
Wilson Botner (1632) 30



Finis Long (2853) 10



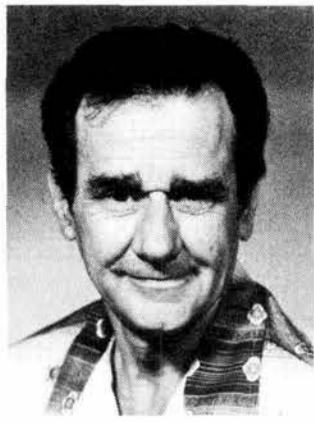
Jim Muntz (7863) 10



Warren Windle (2532) 25



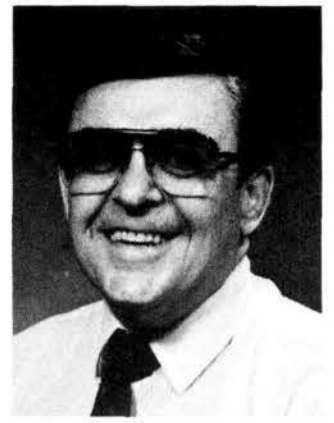
Sam Jeffers (5153) 30



Don Fogel (7123) 25



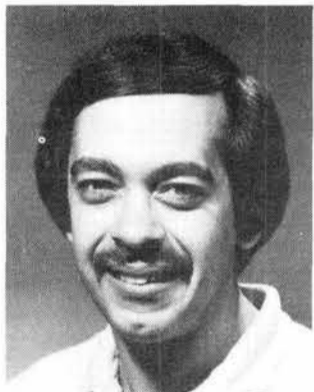
Dick Jorgensen (5113) 30



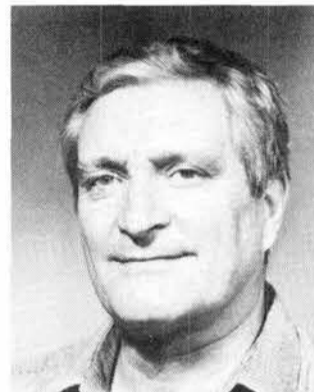
Roger Thorp (131) 15



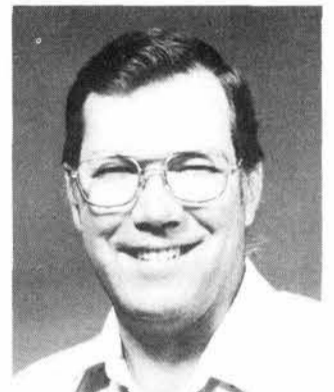
Charlie Zafferty (5323) 25



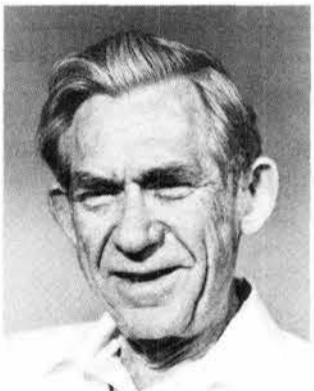
Wil Martin (2857) 10



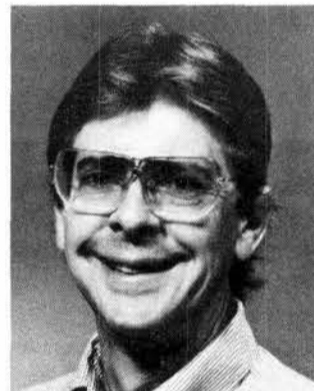
Ed Graeber (5214) 30



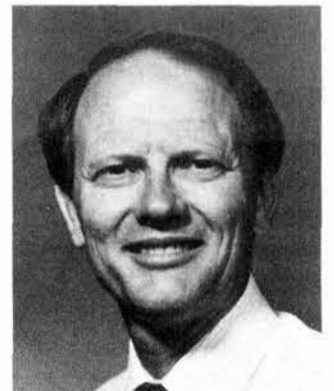
Richard Newell (6256) 20



Stan Howard (5233) 35



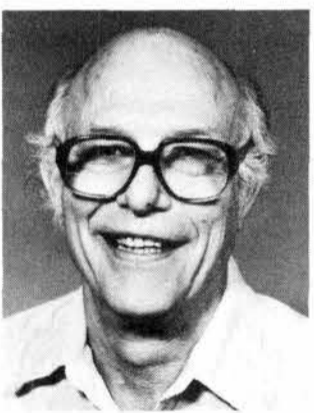
Hugh Scott (341) 10



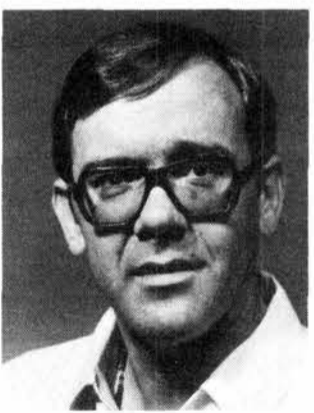
Sam Martin (2541) 25



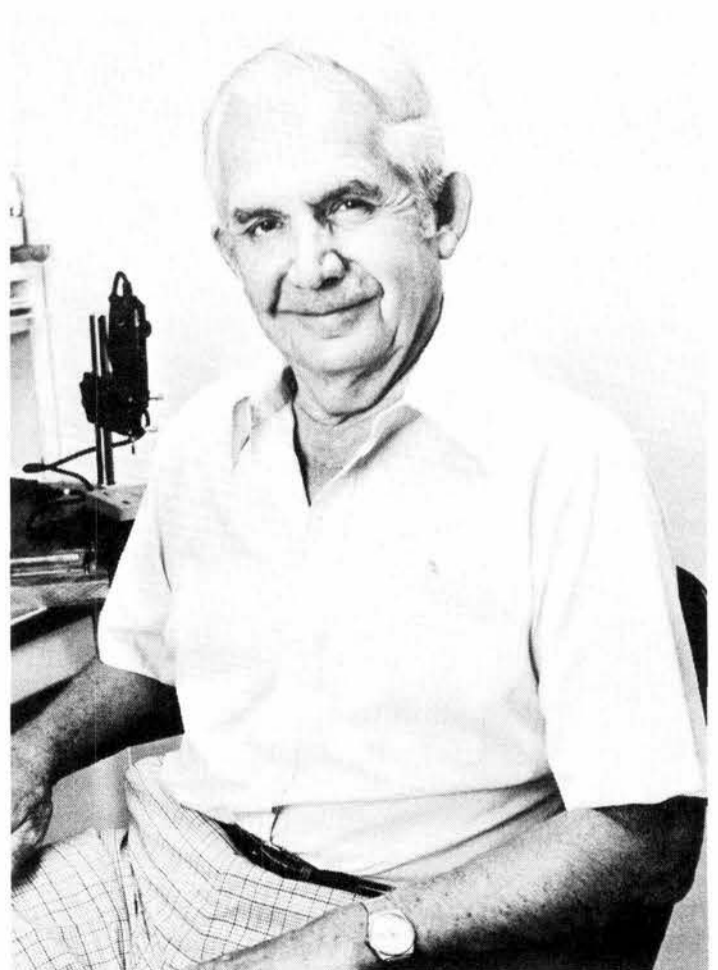
Stu Ingham (7556) 30



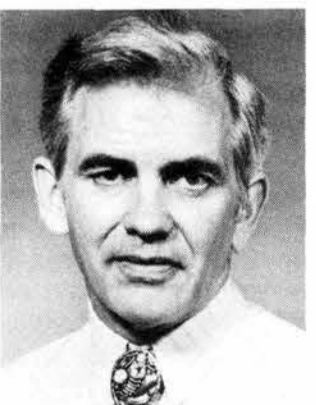
Bob Blackburn (2853) 10



Richard Meyer (7521) 10



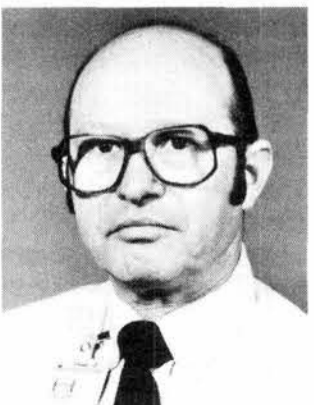
Blythe Wemple (7472) 40



Matt Gubbels (1611) 25



Jerry Foley (1524) 30



Bruno Morosin (1131) 25

MISCELLANEOUS

SANDIA CAPS, T-shirts, \$7. So. Hiway 14 Village Project. LAB NEWS, Bldg. 814, Rm. 1.

DINING TABLE, solid mahogany, 76" x 39", custom-made w/hand carving, Spanish style, 6 matching chairs, \$400. Spielman, 292-4953.

XEROX 610 MEMORY TYPEWRITER, 9 functions, bold, auto center, correct, memory storage, \$900. Ahr, 888-9546 after 5.

DRAFTING MACHINE, Bruning Accutrac, \$135; drafting table, 3' x 5' w/foot-operated tilt/elevation, \$150; 8' fluorescent shop light. Davie, 296-3950.

STEREO RECEIVER/CASSETTE RECORDER w/speakers, \$75; drop-leaf table w/2 chairs, \$65; student desk, \$35; antiques: bed, \$250; dresser, \$50. Holland, 266-1950.

EXERCISE BIKE, Ward's, \$60. Moll, 836-5673.

DELUXE ELECTRIC KITCHEN RANGE, 8 cu. ft. refrigerator, pedestal wash basin, wood kitchen table, monomatic toilet, wet bar, metal cabinet. Houghton, 299-3386.

BARBECUE GRILL, Buddy L Grillmaster, 24" diameter, 3-1/2' high, 4-position vertical grill adjustment, removable legs, \$6. Schkade, 292-5126.

APPLE IIe COMPUTER, 64k RAM, floppy disk drive, monochrome monitor, software, books, \$600. Stoffleth, 296-0081.

ENGLISH SPRINGER SPANIEL PUPS, field-bred, AKC, championship lines, sire and dam on premises, \$150. Jones, 897-0719.

CHESS COMPUTER, 12 levels of play, other features, defeats many humans at 15 sec./move, \$80. Miller, 822-0008.

GIRL'S BICYCLE, 20", \$35; 4 cemetery lots, Sandia Memory Gardens, cost \$425/ea., make offer. Vandi, 255-0685.

21 CU. FT. UPRIGHT FREEZER, white, not self-defrosting, \$75. Hawley, 299-2516.

DINING TABLE, 62" x 42", two 18" leaves, 6 chairs, \$350; couch, \$75; rocking chair, \$35; electric lawn mower, \$50. Phillips, 898-6566.

7-PIECE FRENCH PROVINCIAL BEDROOM SET, white, \$350; antique printer's case, \$25; antique oak rocking chair, \$75. Gover, 296-3928.

25" ZENITH CONSOLE TV, fruitwood cabinet, tube-type, \$100. Kerschion, 299-8652.

AKC COCKER SPANIEL PUPPIES, born 4/17, buff & white, champion bloodlines, \$150/ea. Serna, 865-0475.

COMPLETE FACTORY SERVICE MANUAL (3 vols.) for '85 Olds Cutlass Ciera, Firenza, Calais, Ninety-Eight, \$25. Henderson, 884-8309.

LADY'S SCHWINN 5-spd., \$100; 3 sets draperies: neutral tones, 14' x 8', \$60; gold, 9' \$30; gold, 6' x 7', \$25; 5 rooms carpet, make offer. Pritchard, 293-5297.

UPRIGHT PIANO, \$400. Foust, 292-7091.

ANTIQUE 9' X 12' WOOL RUG, \$200; solid pecan wood entertainment center, \$250; 4 Spanish-style light fixtures, \$100; maple chopping block, \$100. Gover, 296-3928.

EQUALIZER HITCH for big station wagons and big cars, \$100. Harris, 255-6577.

RANGE HOOD, Whirlpool, 30", stainless steel, black front, model RH4 330XL, new, less than half original price, \$55. Freyermuth, 299-2053.

SOFA SLEEPER, queen size, burnt orange, \$200 firm. Ferguson, 292-3824.

AMIGO MOTORIZED WHEELCHAIR, power seat lift, 3-spd. drive head, many accessories, used less than two months, \$1700. Hesch, 892-2105.

KING SIZE WATER BED, heater, wood, mirrored headboard, used 1 year, \$1000 new, asking \$500; Yashica 35mm, zoom, wide-angle lens, carrying case, \$150. Mason, 281-3052.

ROTARY SURFACE PLANNER, Craftsman #29513, for 5/8" arbor radial saws, lists \$19.99 plus shipping, sell for \$10. Allen, 296-6453.

SWAMP COOLER, 4500 CFM complete, 2-spd. 1/2 HP motor, new pump, pads, \$100; 3 golf bags, \$10/ea.; recliner, \$50. Stang, 256-7793.

DISPENSING MACHINES for U.S. postage stamps, 10, best offer; wedding dress, never worn, size 10-12, short train/bustle, \$125. Street, 298-5784.

SOLID-OX WELDER, \$20; Coleman gas stove, \$20; 50', 1/4" coiled air hose, \$5; all never used. Murata, 881-8459.

THERMOS POTENT, 9" diameter, \$20. Rosenberg, 296-1346.

FREEZER, J. C. Penney, 16.1 cu. ft.,

upright, \$200; utility trailer, \$175. Desonier, 292-1277.

HOLLYWOOD DAY BED w/trundle, \$125; playpen, \$20; pressure gate w/swinging door, for children or pets, \$20. Loehman, 265-3179.

TWO LIVING ROOM CHAIRS; GE canister vacuum w/attachments; white pole lamp; braided rugs; hardside Samsonite suitcase w/hangers. Easton, 256-7717.

TWO-BURNER CAMP STOVE, \$19; wine-colored rug, 10' x 11', \$25; complete darkroom: enlarger, washer, dryer, etc., make offer. Horton, 883-7504.

BLACK GERBILS, ready to leave home, \$1.50/ea. Sype, 255-3365.

BATHROOM VANITY w/sink, \$30; wall sink w/fixtures, \$6. Geck, 299-5095.

GARAGE SALE: baby (boy) and maternity clothes; baby items and toys; miscellaneous, 3713 Naples NE, 9 a.m.-5 p.m. Sat., 1-5 p.m. Sun. Moulton, 293-0373.

STOVE, apartment size, gas or propane, \$25; kitchen table w/6 chairs, \$50 OBO. Maestas, 831-4072.

STEREO AM/FM CASSETTE PLAYER, \$50; faucet, single handle, Peerless, \$10; cast-iron sink, white, 21" x 30"; fuse boxes, Square D. Gendreau, 268-3436.

BABY ACCESSORIES: mattress, walker, playpen, changing table, car seat, stroller, toys. Hosking, 898-3369.

ADLER ELECTRIC PORTABLE TYPEWRITER w/case, \$125; swivel rockers w/ottomans, leather upholstery, \$65/ea. or \$115/both. Cox, 255-5657.

SOFA, MATCHING LOVESEAT, CHAIR, earthtone, wood trim, \$350. Weber, 897-2989 after 5:30.

SEARS BEST FIREPLACE HEAT EXCHANGER, \$75; Smith-Corona correcting electric typewriter, new, \$225; electric cooktop, 4 burners & griddle, \$25. Zipperian, 821-2309.

LARGE DOG, Chow/Labrador, housebroken, free to good home, very playful; large dog house, \$70; medium dog carrier/shipper, \$40. Littlejohn, 823-2456 after 8.

MARE, registered 1/2 Arabian, 14.3 hands, chestnut, 12 yrs. old, western huntseat, trail, proven brood mare, \$1500. Baker, 294-3334.

ENCYCLOPEDIA, New Standard (1982), \$200 OBO. Owen, 299-3487.

GREENHOUSE TRAYS, two 8' x 2' galvanized, \$10/ea. Caton, 293-9584 evenings and weekends.

COUCH CUSHIONS, plaid, throw pillows or make bed for camper, five are 25-1/2" x 25", five are 25" x 15", \$7-\$8/ea. Sanchez, 298-4803.

22' TRAVEL TRAILER, Great Divide, self-contained, \$5500. Senses, 821-4563.

COUCH AND MATCHING CHAIR, \$250; coffee table, \$50; side-by-side refrigerator, \$300; microwave oven, \$200. Vigil, 821-8059.

CANON SLR: 35mm, 80mm, 200mm lenses, \$200; darkroom: Nikon, Durst, complete, \$200; Time/Life photography books, 24 vol., \$70. Ginn, 883-0004.

AMANA CORNING WARE cook top, \$100. Smith, 294-3413.

HARDWOOD PALLETS, 18 in various sizes, \$5/ea. or \$50/all. Myers, 821-8318.

TWO TWIN BED SETS, mattress and box spring, \$45/ea. set. Sherwood, 299-8146.

DINETTE, round smoked-glass top, 42" diameter; 4 swivel chairs, white seats, smoked, formed backs; \$225 OBO. Mooney, 281-2612.

REFRIGERATOR, 18.3 cu. ft., coppertone, \$275; Royal typewriter, \$30; wood, swinging cafe doors, \$20. Pilat, 292-4727.

TURBINE MAG RIMS, 5-lug, large hole, \$75/4; headers and intake for AMC 258 6-cyl., \$50; Holley 2-barrel, \$25. Hubbard, 842-9431.

EPSON MX-80 w/Graftrax computer printer, dot matrix 100 cps, no cables but available locally, works with many computers, \$250. Barnette, 292-5186.

LARGE SEARS CAR TOP carrier, heavy duty, used once, \$25. Raab, 821-5925 after 6.

DESK, 30" x 60", file drawer, two other drawers and compartment, \$50. Lukens, 299-1271.

LEATHER SOFA and chair, tan w/wood frame, modern style, \$650. Erickson, 296-0126.

KITCHEN RANGE HOOD, stainless steel, variable speed, \$80. Barton, 268-7349.

DINING ROOM SET, contemporary, walnut and teak, \$550 OBO; antique side chairs, \$125; chairs: 4 for \$50, 2 for \$40. Magnani, 299-8693.

CARPET, 13' x 11.5', rust color, nylon, \$25; headboard, queen or double, antique

white, \$10. Lagasse, 293-0385.

PRIMED HARDWOOD siding pieces, ideal for doghouse siding, etc. Turpin, 281-5933.

BABY GRAND PIANO, Knabe, 56" x 54", symmetrical, ivory keyboard, 40 yrs. old, \$4000. Adcock, 873-2309.

RCA CONSOLE TV, 25", 2 yrs. old, original price \$700, asking \$300. Lehaie, 243-1629.

OSCILLOSCOPE, Heath OM-1, \$35; Precision tube tester, model 10-40, \$45. McConnell, 268-3109.

ANTIQUA DINING TABLE, quarter-sawn oak, 3 leaves, stick & ball turnings, 5 original cane seat chairs, appraised at \$3500, sell \$2500 OBO. Hellmann, 821-0357.

YARD SALE, 6 families: antiques, bicycle, ping-pong table, furniture, 9 a.m.-5 p.m., June 21-22, 11621 Mountain Road NE. Baker, 299-1728.

DINETTE TABLE, 36" x 48", w/12" leaf, 4 captain's chairs, \$175 OBO; crib w/mattress and sheets, \$45 OBO. Baczek, 255-3429.

TRUNDLE BED, steel frame bed w/pop-up steel trundle bed, 2 innerspring mattresses, 33" x 75", \$30. Beard, 821-0309.

AJAY OCTA Gym Exerciser, performs 20 exercises, \$100 OBO. Hernandez, 843-7135.

JAYCO "JAYEAGLE" pop-up camper, sleeps 8, extras, \$3000; bumper pool table, \$75. Benham, 881-2593.

TENT TRAILER, 6' x 8' hard top, sleeps 6, 8' x 10' side room, 3-burner stove with gas bottle, \$900. Geerts, 296-4066.

SWIMMING POOL SLIDE, about 8' tall, \$150. Bingham, 298-6489.

GARAGE SALE, toys, window screens, miscellaneous, June 21, 2824 Espanola NE. Aragon, 881-4795.

SOFA SLEEPER and loveseat, \$300; queen size bed, \$200 OBO. Gurrrola, 293-1655.

FIREWOOD, aged 5 years, 1 cord, \$60. Grimley, 821-4201.

SLIDING PATIO DOOR; 3-pane, 8' wide by 43" high window. Adams, 296-2455 after 5.

DISHWASHER, under cabinet, Roper, double-level washing, \$45. Aydelotte, 867-4143.

LEATHER CHAIR and matching sofa, pale gold. Peters, 293-6356.

PIANO, upright grand, carved mahogany case, \$850 OBO. Herndon, 294-2678.

Because of the July 4 holiday, the deadline for all ads and other LAB NEWS submissions is noon on June 26.

TRANSPORTATION

'81 FORD CUSTOM F100 PICKUP, 4-spd., OD, PS, PB, chrome wheels, original owner, \$4500. Ahr, 888-9546 after 5.

'84 MAZDA 626 LX, 4-dr. sedan, FWD, AC, 5-spd., complete power package, more, 20.5K miles, \$8495 OBO. Jakubczak, 892-6322.

'77 FIAT, 124 Spider, yellow w/black interior, recent top/tires, 50K miles, \$2500 negotiable. Holland, 266-1950.

'78 HONDA CIVIC CVCC WAGON, AC, 67.7K miles, \$1450. Loucks, 281-9608.

'81 CHEVETTE, AT, new tires, AC, AM/FM cassette, 4-dr., silver, Kent, 256-1221.

'86 TOYOTA 4X4, turbo, EFI, 10K miles, take over payments or refinance, no down. Stoffleth, 296-0081.

'74 FORD TORINO WAGON; new tires, battery, best offer. Martinez, 255-6466.

'72 VW BUS CAMPER, stove, refrigerator, sleeps 4, rebuilt Porsche engine, 40K miles, \$1500. Gover, 296-3928.

18' BOAT; wood, fiberglass over; no trailer; no motor; needs work; \$850 OBO. Kerschion, 281-1671.

'76 MERCURY COMET, 66K miles, AT, PS, AC, \$1500. Swenson, 822-1689.

BICYCLE: Diamond Back dirt bike, red alloy rims, double neck, snake tires, free wheel, no brakes, \$100 OBO. Negin, 266-1983.

CHEV. CONVERTED RV VAN, self-contained except for shower, generator, \$7000 firm, cash. Kresge, 821-3933.

'74 BMW MOTORCYCLE, R75-5, 65K miles, \$800. Koetter, 292-4421.

'85 DODGE CARAVAN SE, 2.6L, AC, PS, AT, tilt wheel, more, 6.2K miles, \$10,500. Wilcoxon, 296-8295.

'78 SUBARU 4X4 WAGON, 1600cc, 130K miles, still runs, needs front CV joint,

\$600. Shapnek, 281-5913 after 9.

'78 FORD GRANADA, silver/red interior, Ghia model, V8 engine, power accessories, original owner, \$1500. Gover, 296-3928.

'77 NOVA, AT, AC, PS, PB, 6-cyl., 4-dr., radio, new tires, brakes, shocks, battery, hoses, belts, blower, 78K miles, \$1500. Ellis, 892-7638.

'72 TRIUMPH DAYTONA 500cc TWIN, 8.7K miles, some spare parts and manuals, \$750 OBO. Salmen, 266-0402.

'86 CHEV. C-10 SILVERADO, all power, cruise, dual tanks, 2.1K miles, list \$15,600, sell \$11,900 OBO. Collins, 266-5868.

'79 VW DASHER WAGON, AC, 67K miles, original owner, \$1850. Greenholt, 294-5286.

'77 OLDS CUTLASS SALON, 70K miles, 2-dr., rebuilt transmission, new radial tires, \$1800 OBO. Hall, 299-0009.

'78 OLDS CUTLASS SUPREME, 2-dr., 305 V8, AT, AC, all power, AM/FM stereo and tape, 68K miles, \$2150 OBO. Young, 884-7836.

'84 OLDS OMEGA, 4-dr., AT, AC. Smith, 281-2083.

BOATS: Capri/Cyclone sailboat, \$800; fiberglass kayak, \$75. McConnell, 268-3109.

'70 VW SQUAREBACK, \$600. Maez, 345-5633 or 265-5049.

'83 YAMAHA IT250, extras, \$850. Yagow, 821-6756.

'72 TORINO, 2-dr., \$375 OBO. Geck, 299-5095.

'79 GMC 4X4 SIERRA GRANDE, short bed, w/camper shell, \$4500. Baca, 292-4790.

'81 SUZUKI GS650GL, 1.4K miles, windshield, rack, best offer. McCaughey, 822-0325.

'74 MERCURY COUGAR 351C, new brakes, tires, shocks, electric ignition, and battery, \$1000 firm. Woodrum, 892-7980 after 5:30.

'58 CHEV. NOMAD station wagon, 4-dr., AT, PS, good project car, \$1500 OBO. Landavazo, 242-5587.

'76 HONDA CIVIC CVCC, 2-dr. hatchback, \$800. Wright, 296-3850.

BICYCLE, Girl's, Takara, 10-spd., \$100. Gendreau, 268-3436.

'85 CHEV. CAPRICE WAGON, many options, below book; Stockland fiberglass shell for long-bed truck (off Mazda), \$225. Rowley, 281-2725.

'74 CHEV. PICKUP, 1/2-ton, AT, PS, PB, AM/FM cassette, camper shell, \$1600. MacDonald, 836-4089.

'69 VW FASTBACK, not running, but has all parts, tow it away for \$150. Sabisch, 298-8350.

'78 CUTLASS CALAIS, PS, PB, AC, AM/FM, new tires, \$1800; '77 Toyota Celica, GT Liftback, AT, AM/FM, \$1200. Hendrick, 292-8147.

'66 MERCURY MONTEREY, 410 Marauder engine, no body dents, recent paint, \$800. Senses, 821-4563.

'83 GOLDWING, fairing, bags, trunk, CB, AM/FM tape, cruise control, trailer hitch, \$3400. Brewer, 831-5031.

'80 CHEV. 4X4 SWB, 4-spd., dual tanks, 350, \$4500. Shambo, 294-8530 or 293-1649 after 5.

'83 BUICK CENTURY, 4-dr., V-6, AT, AC, PB, cruise, 21.8K miles, \$600. Smith, 294-3413.

'77 TOYOTA CORONA WAGON, AC, 5-spd., stereo, many new engine parts, \$2500 OBO. Eley, 242-8530.

'74 CHEV. VEGA, 4-spd., rebuilt engine, new clutch, brakes, \$750 OBO. Eisenberger, 877-7041.

'77 CHEV. 1/2-TON PICKUP, AT, PS, PB, 8' Fleetside bed, 18K miles on new engine, \$2295 OBO. Pitcher, 292-4091.

'74 MUSTANG, AT; new tires, shocks, battery; AM/FM cassette radio. Padilla, 296-7471.

'81 KAWASAKI 1000 CSR, 2 helmets, Vetter fairing, more, 6K miles, \$1200. Geerts, 298-8580.

'71 FORD LTD station wagon, AC, PS, AT, dual rear seats, trailer hitch, shop manuals, 108K miles, \$800 OBO. Olman, 884-4663.

'69 HONDA TRAIL 90, low mileage, \$200. Lukens, 299-1271.

'65 SCOUT 4-WHEEL DRIVE, 54K miles, \$2750; Schwinn bicycles, 24", boy's model, \$40/ea. Dean, 299-3281.

'83 MAZDA 626LX, 4-dr., AC, AT, PS, sunroof, AM/FM cassette, electric windows, locks, and mirrors, new tires, \$7500 OBO. Hellmann, 821-0357.

'75 SCOUT 4-WHEEL DRIVE, 48K miles, 4-spd., AC, loaded, custom bumper, 12k winch & tow bar, \$3400. Krukar, 292-3917.

AIRCRAFT SHARE, reconditioned Twin Cessna Skymaster, zero time engines and props, new paint and interior, full

panel instruments. Sarason, 281-1335.

'83 FORD ESCORT, 5-spd., AC, AM/FM stereo, \$3500. Grimley, 821-4201.

'78 OLDS CUTLASS Supreme Brougham, \$2500. Dugan, 821-0691.

'84 PONTIAC 6000LE WAGON, AC, cruise, power seats, windows, mirrors, 24K miles, \$8800 OBO. Westfall, 884-8701.

REAL ESTATE

TOWNHOUSE, 2-bdr., 2-car garage, 2 baths, near golf course off Academy. Bohannon, 822-0060.

3-BDR. CLOSE TO BASE, 2 baths, double garage, updated, open floor plan, southwest landscape, appraised at \$91,500, \$86,500. Mauldin, 293-3763.

SOUTH OF BOSQUE FARMS, 1.36 acres, 3-bdr., 2-1/2 baths, oversize double garage, 30' x 40' barn, fenced, underground utilities, Raymond, 869-9196.

3-BDR. Juan Tabo/Copper area, 1150 sq. ft., 1-3/4 baths, \$67,000. Gurrrola, 293-1655.

3-BDR. BAILEY-WARD, city & mtn. views, corner, pitched roof, fireplace, storage building, Tramway/Copper area, \$95K. Calloway, 292-2429.

1-ACRE WOODED LOT, Pine Crest (Canyon Estates area), 15 min. from base, low down, negotiable terms. Beraun, 292-5815.

3-BDR. HOFFMAN BRICK, Wyoming/Menaul, small den, 1-3/4 bath, 1550 sq. ft., original owner, by appointment, easy financing, \$79,500. Stueber, 299-2414.

7-1/2 ACRES, 3-bdr., well, garden, sheds, pasture, fruit trees, 1 mile from city. Lucy Hegwer, P.O. Box 1131, Truth or Consequences, NM 87901.

'83 2-BDR. MOBILE HOME, 1-1/2 bath, extras, Cedar Crest, \$18,000. Helling, 281-5536 or 294-0582.

FOOTHILLS CUSTOM HOME, 2500 sq. ft., 3-bdr., 2-1/2 baths, LR, DR, FR, city/mountain views, large lot, Piedra Vista Subdivision, \$166,500. Morreale, 298-5182.

TRI-LEVEL MOUNTAIN HOME on 1 acre, close in, secluded, 4-bdr., 2+ baths, solar, deck, oak cabinets, \$124,900. Turpin, 281-5933.

WANTED

AVAILABLE SPACE to York or Manheim, Pa., for transporting small tools and miscellaneous items. Harris, 255-6577.

FEMALE to share new 2-story condo w/ fireplace, own master suite w/attached full bath, \$265/mo. Long, 836-0531.

HOUSEMATE, male, nonsmoker, over 30, 2-bdr. townhouse, 2 baths, 3 mi. from base, \$250. Shambo, 294-8530 or 293-1649 after 5.

MARCH 13, 1986, COPY of Journal or Tribune, need not include advertisement sections. Underhill, 294-5774.

PARTS for '78 Cougar XR-7, need both interior and exterior items. DeVargas, 292-9276.

CONVERSION VAN, full-sized, to rent for vacation the third week in August. Seamons, 298-5683.

RUNNING GEAR for '71-'73 VW Bug, body condition is not important. Souder, 281-3121.

WORK WANTED

HOUSESITTING, college junior, watering, care of pets, etc. during your vacation. Kenna, 298-6059.

VIOLIN LESSONS, for beginners (5-10 yrs. old), during the summer by high school senior. Miyoshi, 821-9118.

HOUSESITTING, during your vacation by college graduate student, loves animals, has references. Baack, 296-2312.

MOWING, GENERAL YARDWORK, or ???, college student with flexible schedule and reasonable rates. Kaestner, 265-0283, ask for Stuart.

HOUSESITTING by student, yard work, odd jobs, or whatever. Rexroth, 293-6025.

LOST AND FOUND

FOUND: Sum of money. Send date, amount, denominations, location, and time of loss to LAB NEWS, Div. 3162.

Travel Fair Next Tuesday

SLOW BOAT TO CHINA? You'll never know if you miss the fantastic Travel Fair sponsored by the C-Club Travel Committee next Tuesday, June 24, starting at 5 p.m. Here's your chance to get specific information on any of the trips coming up between now and the end of 1986. It's also sneak-preview time for 1987, and we understand the committee has outdone itself on the '87 schedule! Elsa de la Puente-Schubeck (wife of Don, Div. 3422) will present a program, "Cities of South America," at 5:30. Elsa really has the scoop on that continent to the south since she's a native of Peru, and has traveled extensively in the area. Free snacks, tea, and coffee, and the usual low prices on food and drinks. All this, and fabulous door prizes to boot!

STAND UP AND CHEER for the Coronado Aquatics Club at home meets tomorrow, June 21, against Albuquerque Country Club, and the following Saturday, June 28, against Paradise Hills. Both meets start at 8:30. Those in-the-swim CAC members welcome your support, so come out and give 'em the home court advantage!

THE THUNDERBIRD ROADRUNNERS are circling those RVs again! This time they're movin' up and headin' out to the Five Branches Camper Park at Vallecito Lake, Colo., June 22-29. More info from wagonmasters Duane Laymon, 822-1749; Tom Brooks, 344-5855; or Henry Ward, 884-9266.

THE CLUB GOES LATIN next Friday night, June 27, when that south-of-the-border group, Together, furnishes the dancing music from 8-midnight. To get you in the cha-cha mood, eat dinner first at the Friday night buffet featuring baron of beef and mahi-mahi, along with a full salad bar, for \$6.95. Don't forget to call the Club Office, 265-6791, for reservations.

IT'S TAILGATE TIME for the Coronado Wolf-pack on June 28 in the west parking lot of the Sports Stadium. (The Lobos went home for the summer, but the Dukes are still in town!) Tailgate action starts at 5 p.m. The Pack furnishes beer, wine, soft drinks, and "Jerry's famous green chile cheeseburgers." Cost per person is \$3.50, plus a covered dish; price includes food, drinks, and a ticket (reserved seat) for the Dukes-Las Vegas game that night. To get in on the fun, send a check payable to Coronado Wolf-pack to Dick Baughman (1154) or mail it to 7309 Dellwood NE 87110. Reservation deadline is next Wednesday, June 25.

ROUNDBALLERS, TAKE HEED! The C-Club Mixed Bowling League still has openings for a few more members for next season. If you can't bowl regularly, the league can also use subs. Contact either John Malmstrom, 822-0228, or Charlie Kaspar, 821-5521.

DECLARE YOUR INDEPENDENCE at a blockbuster of a party in the pool/patio area on July 4 from 11 a.m.-6 p.m.! A tremendous a la carte buffet featuring the likes of hamburgers, hot dogs, BBQ beef and ribs, baked beans, potato salad, macaroni salad, fruit salad, and ice cream will be served from 12-5. Special prices on drinks, and 50-cent beer from two bars set up just for the occasion. The Albuquerque Municipal Band, 100 people strong, will play rousing tunes from 12-2 to get you in the mood. Meanwhile, if you crave even more action, games for all age groups will be in full swing from 12-4. And don't forget the swimming, horseshoes, etc., etc.

TENNIS, ANYONE? You can learn the basics or sharpen those skills if you sign up for adult tennis lessons offered by the C-Club. It's too late now for the June session, but two more are coming up

July 7-31 and Aug. 4-28. Classes meet twice a week — beginners from 6-6:45 p.m., and intermediates from 6:45-7:30 p.m. Cost for a four-week session is \$24, and any C-Club member is eligible for sign-up. Call the Pool Office (266-5587) to enroll.

AFTER YOU'VE BEEN to the Travel Fair on the 24th, you'll probably want to sign up for all the fantastic trips that are just around the corner:

Aspencade — This one is a deluxe photographer's tour to catch all the fall color from Sept. 27-30 in Telluride, Taos, and all the mountain passes in between. The \$145/person (double occupancy) tab covers round-trip charter bus fare, two nights' lodging in Telluride, one night's lodging in Pagosa Springs, three continental breakfasts, one lunch on the bus, and dinner at Rancho de Chimayo the last day of the trip. All the spectacular autumn scenery along the way is thrown in absolutely free.

Southern Colorado — Call the Club office (265-6791) to see if space is still available on this July 11-13 sojourn to Mesa Verde and Durango, including a trip on the narrow-gauge train from Durango to Silverton.

The Ozarks — This Oct. 18-24 takes you to fascinating spots in three states, and it's the peak time for fabulous fall colors in that part of the country. The \$637/person price includes round-trip air fare to Tulsa, six nights' lodging, admission fees for all kinds of museums along the way, two special dinners, hillbilly and popular music shows, the Great Passion Play, Shepherd of the Hills outdoor drama, and deluxe motorcoach transportation. Reservation deadline is Sept. 15.

Laughlin/Lake Havasu City — October is a fine time to try your luck at the gaming tables of Laughlin, Nev., and do some sightseeing in Lake Havasu City, Ariz. This action-packed, four-day fling (Oct. 13-16) is just what the doctor ordered to cure those "here-comes-winter blues." The prescription only costs \$150/person, and includes three nights at Laughlin's Edgewater Casino/Hotel, one free breakfast or lunch buffet of your choice, round-trip motorcoach fare, and refreshments along the way. It's limited to one busload of folks, so plan to sign up before the Aug. 12 deadline.

Canyon de Chelly — This ever-popular weekend trip is scheduled Oct. 26-27. It's your chance to see cottonwoods in their golden autumn regalia up against those splendid 1000-foot red sandstone walls! The low, low price of \$98/person covers charter bus fare, one night at Thunderbird Lodge, jeep tour of both canyons, a continental breakfast, a picnic lunch at Wheatfields Lake, and a stop at the Hubbel Trading Post. Here's one you shouldn't miss!



THROUGH THE EFFORTS of Technology Transfer and Management Department 4030, Robert Jensen, Chief of Systems Engineering at De Vore Aviation Corp. (Albuquerque), was on premises recently to subject a De Vore product to several hours of testing with a 50-hz, 1 kW power supply in a lab run by Project Engineering Division 5233. The device, which controls voltage in a light that is used as an aircraft landing aid, will be shipped to Europe, where it will run on 50-hz power. After learning of the company's need for access to a 50-hz testing source, Glenn Kuswa (4030) acted as middleman between De Vore and Don Hanson, Div. 5233 supervisor.

Writers: Ultimate Status Symbols



"Too many in our society try to graduate from the work of writing (not to speak of reading): just as it is a status symbol to have a chauffeur, so it is becoming a status symbol to have a writer. Ghostwriting and ghostreading are all about us; they obviously weaken the sense of what it means to write, and they make the appreciation of literary study harder. In the eyes of the government or business or those who make essential decisions, we are often a specialized service. Our function is to help others write or to provide writing skills on call. They would like our motto to be, 'Let us clean up your prose.' Or, 'Leave the writing to us.' This attitude dehumanizes thinking by separating thinking from writing. Thinking becomes 'executive thinking.' Only those who do their own writing know how problematic 'communication' is, what unexpected thoughts and issues may arise, what a struggle it is to sift and winnow ideas, to find one's way back, or to find a new way. . . . The genuine writer knows that practice never ceases: you don't graduate from writing any more than you do from thinking. Writing is an activity that takes place in time and cannot leave time."

Geoffrey Hartman, *Harper's*

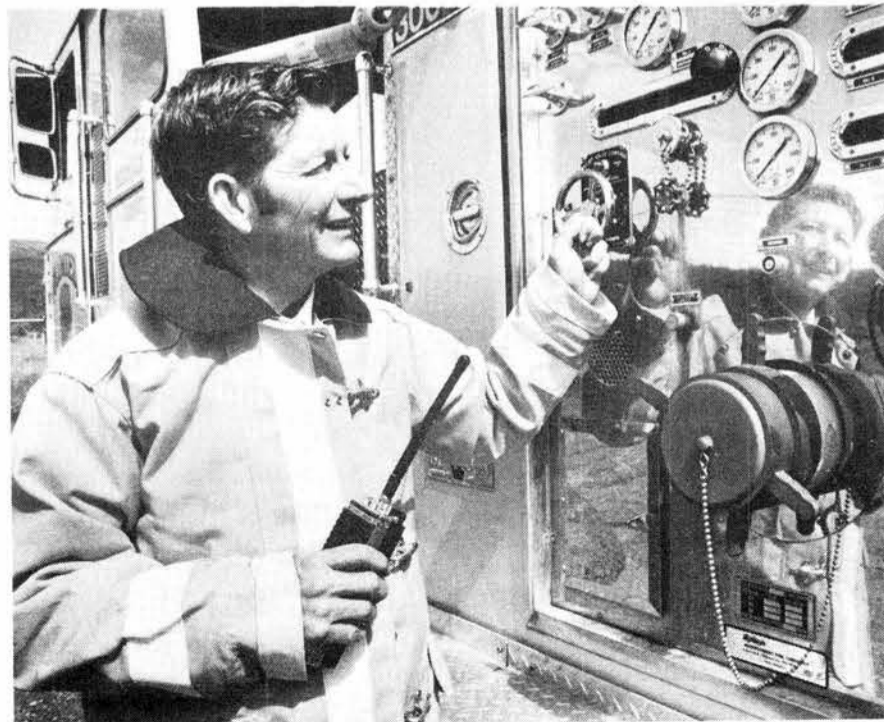
Death



Juan Armijo, Jr., of Remote Areas Maintenance and Test Support Division 7818, died June 5 after a lengthy illness. He was 44 years old.

Juan had been at the Labs since October 1966.

He is survived by his wife, daughter, and stepson.



RAY CLARK (1248) was elected president of the Southwestern Division of the International Association of Fire Chiefs at its annual meeting last month in Midland, Tex. He's shown adjusting a valve that determines hose output on one of the fire trucks for Bernalillo Co. Fire District #6 (Sandia Park/Cedar Crest), where he's been fire chief since 1976. Ray is the first volunteer (as opposed to career) fire chief to be elected division president. He'll hold office until May 1987.